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Abstract

African American bankruptcy filers are more likely to select Chapter 13 than other debtors, who opt instead for Chapter 7, which has higher success rates and lower attorney fees. Prior scholarship blames racial discrimination by bankruptcy attorneys. We present an alternative explanation: Chapter 13 offers benefits, including retention of assets such as cars and driver's licenses, that are more valuable to African American debtors because they have relatively long commutes. We take advantage of a 2011 policy in Chicago, which suspended driver's licenses of consumers with large traffic-related debts. The policy produced a large increase in Chapter 13 filings, especially by African Americans. Two mechanisms explain the disparate racial impact: African Americans were more likely to have traffic-related debts and they incurred greater costs from license suspension due to their relatively long commutes. When we match African Americans to other debtors with similar commutes, we find no racial difference in the propensity to file for Chapter 13. These findings suggest that racial disparities in bankruptcy reflect racial disparities in commuting.

JEL classification: D14, D12, G33, K35, R20
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1 Introduction

Among those who file for bankruptcy, African Americans are substantially more likely to select Chapter 13 over Chapter 7 when compared to white debtors. This has been documented in prior scholarship by Braucher, Cohen, and Lawless (2012), and has been the subject of media coverage in the *New York Times* (Bernard (2012)), *The Atlantic* (Kiel (2017)), and *ProPublica* (Sanchez and Kambhampati (2018)). This apparent "racial sorting" into Chapter 13 is worrisome because a Chapter 13 filing is substantially more costly, more time consuming, and less likely to discharge debts than a Chapter 7 filing, as discussed by Morrison and Uettwiller (2017). Attorney fees are more than twice as expensive ($2,600 instead of $1,000), payments to unsecured creditors are substantially larger (because some Chapter 13 trustees demand minimum recoveries to these creditors), a Chapter 13 plan takes three to five years to complete (Chapter 7 cases complete within about 4 months), and around two-thirds of Chapter 13 cases terminate without a discharge of debts (this happens in less than four percent of Chapter 7 cases). A commonly cited reason for using Chapter 13, instead of Chapter 7, is to shelter assets that would otherwise be liquidated in Chapter 7. Chapter 13 allows a consumer to discharge debt by giving up future income (all disposable income earned over a three to five year period); Chapter 7 allows the consumer to discharge debt by giving up assets, such as cars and houses. Chapter 13 is, therefore, often described as a device for "saving your home," as argued by White and Zhu (2010). Yet this commonly cited explanation for preferring Chapter 13 seems implausible for the vast majority of filings by African Americans, most of whom have few or no assets vulnerable to liquidation in Chapter 7. A more plausible explanation for these patterns is racial discrimination by bankruptcy attorneys, who may be more likely to "steer" African Americans into Chapter 13 than their white counterparts. Braucher, Cohen, and Lawless (2012) present experimental evidence consistent with this hypothesis.

This paper tests an alternative hypothesis: In some areas of the United States, financially distressed African Americans are more likely to benefit from Chapter 13 than other consumers. A Chapter 13 filing not only allows consumers to retain assets, but also forces the return of assets that have been seized. These assets include physical property, such as

cars and homes, as well as government permits, such as driver's licenses. These benefits are generally unavailable in Chapter 7, as discussed in detail below (Section 2). The benefits of Chapter 13 could be more valuable to African Americans than to other debtors for at least two reasons: (i) African Americans may be more likely to accumulate and default on debts that entitle creditors to seize assets that cannot be sheltered in Chapter 7; and (ii) they may face higher costs of asset seizure. Using data from Chicago and supporting evidence from other major cities, we show in this paper that both (i) and (ii) are important determinants of Chapter 13 filing decisions by African Americans and explain much of the difference in filing rates between African Americans and other debtors.

We study a natural experiment in Chicago. When Rahm Emanuel took office as Mayor in 2011, he announced a policy that increased city enforcement of outstanding traffic and parking debts. Chicago identified drivers with large accumulated debts and commenced proceedings to suspend their driver's licenses. The Emanuel policy had a much larger effect in African American neighborhoods than other areas. The city identified substantially more drivers (per capita) with large accumulated debts and suspended substantially more licenses (per capita) in predominantly African American zip codes than in other zip codes. This caused an increase in Chapter 13 filings throughout the city, with a much larger increase among African Americans, even though Chapter 7 filings were declining. Indeed, Chicago-area attorneys specifically advertised Chapter 13 as a solution for consumers facing license suspensions and vehicle seizures due to unpaid traffic debts.[1] Among consumers who filed for bankruptcy, the probability of choosing Chapter 13 (instead of Chapter 7) increased across all races, but the increase was 10 percentage points larger among African Americans. Among car-owning consumers who chose Chapter 13, the share of filings by African Americans had been declining prior to the Emanuel policy. After the policy went on-line, the African American share reversed trend and increased from 42% in

[1] Websites for leading Chicago-area firms included such statements as "Stop Chicago Tickets. Eliminate All Penalties & Fees. Get Your License Back. The state will suspend your driver's license for unpaid Chicago parking tickets. A DebtStoppers bankruptcy plan can wipe out all parking ticket debt and get your license re-instated immediately." (web.archive.org/web/20140208010235/https://www.debtstoppers.com/) (Feb. 8, 2014); "CHAPTER 13 CAN BE THE SOLUTION (1 Payment) ... Lawsuits & License Suspension & Parking Tickets" (web.archive.org/web/20111205044445/http://www.infotapes.com/webB/Chapter13.htm) (Dec. 5, 2011); "Chapter 13 Bankruptcy Helps Pay Off Parking Tickets."
(davidmsiegel.com/repay-parking-tickets-over-a-five-year-period-bankruptcy/ (Dec. 7, 2013)

2011 to 55% in 2015.

These findings show that African Americans were more likely to accumulate city debt, more likely to be targeted by city enforcement efforts, and consequently were more likely to file Chapter 13 bankruptcy cases in response to the Emanuel policy compared to consumers from other racial groups. The Emanuel policy thus produced a racial disparity that has previously been attributed to "steering" by bankruptcy attorneys. We find additional evidence indicating that African Americans experienced higher costs, on average, from license suspension. When we control for the number of license suspensions per zip code, we continue to find a larger increase in Chapter 13 filings in African American zip codes, indicating a higher sensitivity to license suspensions. Consistent with this interpretation, the post-Emanuel policy increase in Chapter 13 filings is largest in African American zip codes with relatively long commutes to work (defined by the percentage of residents commuting more than 45 minutes). By contrast, among zip codes with short commutes, we see little or no difference between African American and non-African American zip codes. These findings suggest that the differential response to the Emanuel policy—with African Americans filing Chapter 13 cases at higher rates than other consumers—is attributable in part to differences in the value of retaining automobiles. On average, African Americans may have longer commutes to work and live in areas that are farther away from schools, medical services, and supermarkets. We test this hypothesis by matching African American bankruptcy filers to non-African American filers based on consumer characteristics, including estimated distance to work and on debt to the City of Chicago. Within this matched sample, we cannot reject the null hypothesis that there are no racial differences in the probability of choosing Chapter 13 after the Emanuel policy comes on-line.

We conclude that observed racial disparities in bankruptcy are attributable, in large part, to underlying differences in the background characteristics (especially commuting times) between African American and other consumers. African Americans are more likely, on average, to experience debt enforcement actions, including seizure of a car or driver's license. African Americans are also more likely, on average, to need that car or license for commuting to work.

We explore alternative explanations for our findings, including the possibility that the post-policy increase in Chapter 13 filings is attributable to liquidity constraints faced by African American consumers, not to a desire to recover suspended driver's licenses. Bankruptcy attorney fees generally must be paid up-front when a consumer files for Chapter 7, but can be paid in installments during a Chapter 13 case. When Chicago identified drivers with large outstanding debts and commenced collection efforts, drivers may have preferred Chapter 13 because it has lower up-front costs. We show that liquidity constraints cannot explain the post-Emanuel policy increase in Chapter 13 filings among African Americans. First, our regressions include individual-level controls that account for available liquidity (such as monthly income as well as assets and secured debt). More importantly, we study the response to the Emanuel policy among consumers who were represented by a pro-bono law firm that charges no legal fees, the Legal Assistance Foundation (LAF). We find a sharp post-Emanuel policy increase in both the number and proportion of Chapter 13 filings at LAF. We view this as strong evidence that liquidity constraints, although important to the filing decision generally, are not driving our findings. Instead, the post-Emanuel policy increase is more plausibly driven by consumer efforts to recover their licenses. Consistent with this conclusion is evidence that, regardless of race, we see a sharp post-Emanuel policy increase in the proportion of Chapter 13 cases in which the debtor was cited for driving without a license during the 12 months preceding the bankruptcy filing.

Our findings indicate that discrimination by attorneys is, at most, a partial cause of observed racial disparities in bankruptcy. In our data, we observe the same racial disparities observed in prior work. However, when we include controls for the consumer's zip code (reflecting driving distance) and debt to the City of Chicago, the racial disparity shrinks by 50%. When we include attorney fixed effects, which account for the fact that some attorneys "steer" all clients to Chapter 13 regardless of race, the racial disparity becomes less than a tenth of its original size (with at most a two percentage point difference in the probability of choosing Chapter 13 over Chapter 7).

Although this paper is motivated by racial disparities in consumer bankruptcy, it has implications for the design of bankruptcy law and public finance. First, our findings in-

dicate that, although we see racial disparities in bankruptcy, Chapter 13 is used as theory predicts: debtors—particularly the working poor—use it to retain assets (a) for which the costs of ownership (through a Chapter 13 repayment plan) are lower than the costs of substitutes (such as renting comparable assets) and (b) that would be lost in Chapter 7, as discussed in Li and Sarte (2006) and White and Zhu (2010). In response to the Emanuel policy, debtors filed Chapter 13 cases to recover their licenses because (a) there are no substitutes for debtors with long commutes and limited access to alternative modes of transportation and (b) licenses cannot be recovered through Chapter 7. The racial disparity is driven primarily by non-bankruptcy policies (such as the City of Chicago's enforcement policies), not by attorney discrimination. Second, our findings indicate that the Emanuel policy triggered an increase in Chapter 13 filings, especially by African Americans, because (i) the Bankruptcy Code permits the discharge of fees and fines only in Chapter 13, not in Chapter 7; (ii) the city's lax enforcement policy allowed residents to accumulate debts that could not be managed without a bankruptcy filing; and (iii) there is no statute of limitations applicable to fines arising from traffic debts. Reforms along any one of these dimensions would have a substantial effect on the propensity to file for Chapter 13.

Our paper contributes to the literature on racial discrimination in bankruptcy courts, summarized by the American Bankruptcy Institute (2019). We also contribute to a large literature in sociology and (to a lesser extent) economics that explores the extent that distance to work or other amenities (such as supermarkets) is greater for the poor, especially African Americans. A persistent theme in this "spatial mismatch" literature is that African American households face substantial disadvantages in commuting to work, as discussed in O'Regan and Quigley (1999) and Kneebone and Holmes (2015).[2]

This paper is organized as follows. Section 2 presents background on bankruptcy law and prior research on the relationship between commuting distance and race. We also describe the natural experiment presented by the Emanuel policy. Section 3 presents our data and summary statistics. We present our results in Section 4. The concluding Sections

[2]For example, Andersson et al. (2017) find that a recently unemployed consumer is more likely to find new employment if she lives closer to available jobs, and the effect is substantially larger for African Americans and those living in high-poverty areas.

5 and 6 assess the implications of our findings for the attorney "steering" hypothesis and for policy more generally.

2 Background: Bankruptcy Law and Chicago Policy

2.1 Bankruptcy Law

The United States Bankruptcy Code offers two primary options for distressed consumers seeking to discharge their debts. One is Chapter 7, which offers the consumer a discharge of most debts if the consumer agrees to liquidate "non-exempt" assets and distribute the proceeds to creditors. Every state "exempts" certain assets, which the consumer can keep even after debts are discharged. In Illinois, for example, an unmarried consumer can exempt up to $15,000 of home equity, $2,400 of the value of a motor vehicle, and $4,000 of any personal property (exemption limits double for married couples who file a joint bankruptcy petition). The latter amount can be applied to the motor vehicle, allowing the consumer to exempt up to $6,400 of the vehicle's value. Thus, if the consumer owns a car that is worth less than $6,400 ("exemption limit"), and there is no lien on the car, the consumer can keep the vehicle even after her debts are discharged in Chapter 7. If the car is worth more than the exemption limit, it will be sold and the exempt value distributed to the consumer. If the car has a lien on it, it will be sold, the proceeds paid to the secured creditor, and any excess paid to the consumer, up to the exemption limit.

The other option for a distressed consumer is Chapter 13, which offers a discharge if the consumer distributes all of her disposable income to creditors for three to five years (three years if the consumer has sufficiently low income). The Chapter 13 discharge is broader than the one offered by Chapter 7. For example, Chapter 13 discharges civil fines, such as traffic and parking debts, something not possible in Chapter 7. A consumer who files for Chapter 13 can also retain all of her assets. If a creditor (including a government agency) has seized an asset, the consumer can demand its return in most states.[3] Although all

[3]There is some disagreement among courts whether the government must return an impounded vehicle. The majority of courts that have considered the question, though, hold that the government must do so. See *In re Fulton*, 926 F.3d 916 (7th Cir. 2019).

assets—exempt or non-exempt—are retained, it still matters whether the assets are exempt. The value of non-exempt assets determines, in part, the minimum payoff that the consumer must distribute to creditors during the five-year repayment period.[4]

The principal advantage of Chapter 13 is, therefore, the ability to retain assets. Prior scholarship, such as White and Zhu (2010), has focused on the ability to retain a home, but retaining a vehicle may be just as important. Additionally, a consumer can retain non-conventional "property" such as a driver's license, if it was seized on account of unpaid debts. Thus, for a car owner, Chapter 13 has three distinct advantages relative to Chapter 7: (i) retention of the vehicle, (ii) recovery of a suspended license, and (iii) discharge of debts arising from parking and traffic fines.[5]

The principal disadvantages of Chapter 13 are its cost and success rate. Relative to Chapter 7, it is substantially more expensive, as discussed in Morrison and Uettwiller (2017). Attorney fees average about $1,000 in Chapter 7 but $2,600 in Chapter 13 (with a very large standard deviation). Additionally, consumers often must pay substantially more to creditors (over the course of a three to five-year repayment period) in Chapter 13 than in Chapter 7. Although it costs more than Chapter 7, Chapter 13 is less likely to yield a discharge of debt. A debtor fails to receive a discharge in two thirds of Chapter 13 cases, but in less than three percent of Chapter 7 cases, as discussed in Greene, Patel, and Porter (2017). For a car owner, then, Chapter 13 is a high-cost bankruptcy option with a low expected success rate.

[4]In practice, however, this minimum payoff floor is unlikely to be binding because of the requirement that the consumer pay all of his or her disposable income. Morrison and Uettwiller (2017) provide more background on Chapter 13 and the ways it differs from Chapter 7.

[5]Technically, it may be possible to recover a suspended driver's license by filing for Chapter 7, which would discharge other debts, thereby freeing up cash to pay parking and traffic fines. This strategy would be feasible only for debtors with sufficient cash flow to pay the fines. Because the average debt owed to the City of Chicago is over $1,000 among Chapter 13 filers and about 40% of these filers have income below 150% of the poverty line, this strategy seems infeasible for a large proportion of Chapter 13 filers. Additionally, only 0.1% of Chapter 7 filers have debts to the City of Chicago, suggesting that the strategy is rarely employed by these filers. To be sure, given much higher attorney fees in a Chapter 13 case, this strategy would be attractive if the City of Chicago offered sufficiently generous repayment plans allowing consumers to pay debts slowly over time. Currently, the city does offer a repayment plan, but consumers with suspended licenses must make a down payment equal to 25% of outstanding debt plus 100% of outstanding fees for booting, towing, etc. See City of Chicago, Department of Finance (2018).

2.2 *Chicago Policy*

Rahm Emanuel became Chicago's Mayor in May 2011. In October of that year, he issued a press release announcing that "his administration will implement a new aggressive approach to improve collections owed to the city, including millions of dollars in unpaid parking tickets, unpaid fees, fines and penalties. The reforms are anticipated to bring in up to an additional $33 million in collections in 2012." City of Chicago (2011). The press release explained that, in the past, billing and collection were fragmented across several city departments. The new policy would, among other things,

> "improve collections by consolidating debt types for individuals who owe for more than one type. [The Mayor] will also call for contracted collection agencies to increase rates to recover $5 million in debts. For example, there is one Chicagoan who owes $87,000 in parking tickets on four different license plates that go back to 2005, $70,000 on one plate alone. This case is now in the hands of a city law firm."

The process for enforcing parking and traffic debt in Chicago has several stages (as described by City of Chicago, Department of Finance (2018)). A driver first receives a notice of violation after the city detects a parking or traffic violation. If the driver does not contest the violation within 21 days, he or she receives a "notice of determination," which represents a debt to the city. The debt must be paid by a specified deadline; if it is not, the debt is doubled and the driver is sent a "notice of final determination," which may add fines and penalties to the original debt. When a driver accumulates three or more "final determinations" (or if two determinations are at least a year old), the city will send a "notice of seizure" (SEIZ), which alerts the driver that the city will boot and impound her car if she does not pay the debt within 21 days. The car will be impounded by the city until it receives payment of the outstanding debt, plus towing and daily storage fees. If the vehicle is not redeemed within 15 days, the City can sell or destroy it. When a driver accumulates final determinations for at least ten parking tickets or five automated camera violations, the city will send a "notice of impending driver's license suspension" (DLS). If the driver does not pay outstanding debts, the city will alert the State of Illinois that it should suspend the driver's license. The license remains suspended until the city alerts the state that the outstanding debt has been paid.

There are, therefore, two principal tools by which the city enforces parking and traffic debt: vehicle seizures (SEIZ) and license suspensions (DLS). Through FOIA requests, we obtained data on the number of SEIZ and DLS notices by zip code in Chicago from 2008 through mid-2016. We also received total debt related to parking and traffic tickets (DEBT), by zip code. Figure 1 plots these data by year. There is a sharp change in trend for DLS, which had been declining prior to 2011. SEIZ remains relatively flat. It appears, then, that the city's policy primarily operated along the dimension of license suspensions. The trend in DLS is mirrored in total debt (DEBT) in Figure 1, which shows a sharp increase after 2011. As we show in the Appendix, it appears that, beginning in 2011, the city began collecting long-overdue debts (especially tickets issued more than 7 years ago) and increased ticket prices (see Figure D.4).[6]

3 Data

Our primary dataset includes information about consumer bankruptcy filings in Chicago during 2008 through 2016. We link two data sources. One is the Federal Judicial Center Integrated Database (IDB), which includes information about the consumer's address (zip code), capital structure (values of real and personal property and secured and unsecured debt), and case characteristics, such as filing date and outcome. The other data source is the CM/ECF Document Filing System for the bankruptcy court for the Northern District of Illinois, which encompasses Cook County and nearby counties. We downloaded and scraped every petition for every Chapter 7 and 13 case filed between 2008 through 2016. For Chapter 13 cases, we also scraped the docket sheets, proofs of claim filed by the City of Chicago, BNC Certificates of Notice (providing a list of creditors), and proposed repayment plans. Using these data, we can identify the name and address of each debtor, the debtor's occupation and work address, whether any debt was owed to the City of Chicago, and whether the city took steps to seize the debtor's car or suspend her license.

We link these bankruptcy data to several datasets, including (i) monthly, zip code-level data on traffic and parking enforcement in Chicago, (ii) Census data on racial composition

[6]Figure D.4 uses ticket-level data obtained by ProPublica via a FOIA request. These data are publicly available at `www.propublica.org/datastore/dataset/chicago-parking-ticket-data`.

and commuting times by census tract and zip code tabulation area, and (iii) Food and Drug Administration (FDA) data on "food deserts," defined as census tracts in which at least a third of the tract's population resides more than a half-mile from a supermarket or large grocery store.[7] We also link our bankruptcy data to a database on arrests in Cook County. These data, made available by a local vendor,[8] include misdemeanor citations for driving without a driver's license.

Finally, we impute the race of bankruptcy filers based on their names and addresses. Data on race by surname is available from the 2000 census; race by first name is available from an Office of the Comptroller of the Currency database, drawn from mortgage applications and assembled by Tzioumis (2018); race by census tract is available from the 2010 census. We combine these sources, applying the same algorithm recommended by the Consumer Financial Protection Bureau (2014), to estimate the probability that a person in our data is African American. We identify a person as African American if our algorithm predicts a probability greater than seventy percent (our results do not change if we use a higher cutoff).[9]

Table 1 summarizes our data, showing that Chapter 13 filings account for about a third of cases. African Americans account for about forty percent of Chapter 13 filings but less than twenty percent of Chapter 7's. Relative to Chapter 7 filers, Chapter 13 debtors have higher incomes, are more likely to own cars, and are more likely to have secured debt.

We begin by documenting the correlation between distance, race, and bankruptcy in Chicago. Table 2 stratifies zip codes by distance from work and supermarkets. Distance from work is defined as the percentage of zip code residents who travel more than 45 minutes to work. Distance from supermarkets ("food desert") is defined as the percentage of residents who live at least one mile from a supermarket. We rank zip codes by the

[7]The FDA provides an alternate definition, identifying tracts in which over a third of the population resides more than a mile from a supermarket or large grocery store. These definitions apply only to non-rural tracts. For rural tracts, which are not relevant to this paper, the FDA uses a longer travel time (e.g., 10 miles) to identify food deserts.

[8]The data are obtained from Cook County public records and resold by Record Information Services, `https://www.public-record.com/`.

[9]Our results are similar, but weaker and less precisely estimated, when we impute race based solely on first and last name.

percentage of residents who either travel at least 45 minutes to work or live in a food desert. Table 2 reports means for each quintile of this "Distance" ranking.

Chapter 13's share of bankruptcy filings ("% Chapter 13") increases nearly monotonically as we move from the first to fifth quintile, consistent with the hypothesis that Chapter 13 tends to be more attractive to financially distressed consumers when they live in places where cars are likely an important means of accessing work and amenities. Table 2 also shows that African Americans are much more likely to live in zip codes with high Distance rankings. This is consistent with the hypothesis that African Americans are (a) more likely to live in zip codes where cars are likely an important means of transportation and, as a result, (b) more likely to file for Chapter 13 when they become financially distressed. This phenomenon—the correlation of distance, race, and Chapter 13 filing rates—can be observed in other cities, such as Atlanta and Memphis, which have been the focus of academic and media reports because African Americans account for a disproportionate share of Chapter 13 filings relative to Chapter 7. This is illustrated by Figures E.4 and E.5 in the Appendix.

4 Evidence from the Policy Change

We hypothesize that African American bankruptcy filers are, on average, more likely to file a Chapter 13 petition than other debtors because (i) they are more likely to accumulate and default on debts that permit creditors to seize assets that cannot be sheltered in Chapter 7 and (ii) they face higher costs from seizure of those assets. We test these hypotheses using the Emanuel policy, which triggered a sudden increase in driver's license suspension notices (DLS notices), as shown in Figure 1. Although the process for suspending a license is mechanical, as described in Section 2 above, the policy had a much larger impact on African American drivers. This is shown in Figure 2, which plots (i) debt owed to the City of Chicago and (ii) DLS notices per capita for predominantly African American and non-African American ("Other") zip codes in Cook County. A zip code is deemed "predominantly" African American if African Americans account for at least 50% of its population; the remaining zip codes are defined as "Other." Figure 2 shows that, among

African American zip codes, per capita DLS notices roughly tripled after the Emanuel policy commences in 2011. The increase is smaller (but still substantial) in Other zip codes: DLS notices roughly doubled during the years following the Emanuel policy.

We view the Emanuel policy as a shock to the probability that drivers, especially African Americans, would have their licenses suspended by the city government. Licenses are assets that can be protected through a Chapter 13 filing (and can be recovered, if already seized), but not through Chapter 7. We hypothesize that the policy caused an increase in Chapter 13 filings by African Americans, relative to other races. We also hypothesize that DLS notices were more costly, on average, for African Americans than other drivers because African Americans rely more heavily on cars for commuting.

4.1 Racial Differences in the Effect of the Emanuel Policy on Bankruptcy Filings

Figure 3 plots total bankruptcy filings by race. Panel (a) compares African Americans and non-African American ("Other") filers; Panel (b) compares African Americans to White filers. The data underlying this figure are drawn from individual-level bankruptcy files. Before the Emanuel policy went on-line in 2011, total Chapter 13 filings by African Americans were nearly identical to filings by White debtors. After 2011, we see a divergence, with an increase in African American Chapter 13 filings in absolute terms and relative to Others. A very different pattern characterizes Chapter 7 filings, which declined across all races beginning in 2010, with a much sharper decline among non-African American debtors. This decline pre-dates the Emanuel policy and likely reflects the end of the recession; a similar decline in Chapter 7 filings is observed throughout the country.

If the Emanuel policy caused an increase in Chapter 13 filings, especially among African Americans, we should also observe that, among bankruptcy filers, the propensity to select Chapter 13 should increase for all races after the Policy goes on-line, and this increase should be larger for African Americans. We test this hypothesis using a standard event-study difference-in-difference regression, following Almond, Hoynes, and Schanzenbach

(2011) and Autor (2003):

$$B_{it} = \alpha + \sum_{k=2008}^{2010} \mu_k \cdot AfricanAmerican_i \cdot 1[t = k] + \sum_{k=2012}^{2016} \mu_k \cdot AfricanAmerican_i \cdot 1[t = k] + AfricanAmerican_i + \theta_t + X_{it} + \varepsilon_{it} \quad (1)$$

Here, B_{it} is equal to one if consumer i filed a Chapter 13 petition in calendar year t, and equal to zero if she filed for Chapter 7. $AfricanAmerican_i$ is equal to one if the consumer is African American; θ_t is a vector of calendar year fixed effects; and matrix X_{it} includes a variety of controls, including the (log) value of personal property, real property, total debt, secured debt, and monthly income and expenses.[10] The coefficients of interest are μ_k, which measure the change in the probability of a Chapter 13 filing among African Americans, relative to Other Debtors, during the calendar years prior to and following the year when the Emanuel policy went on-line (2011). Standard errors are clustered by zip code. The identifying assumption in our model is that, conditional on observables, the timing of the choice between Chapters 7 and 13 is unrelated to the individual's race, up to a constant difference. By interacting $AfricanAmerican_i$ with year fixed effects, both before and after the policy goes on-line, we can assess whether pre-policy trends are (in)consistent with our identifying assumption.[11]

Figure 4 presents the μ_k coefficients from this model (the estimates are reported in Table 3, column 1). We observe a sudden jump upward, immediately after implementation of the Emanuel policy, in the relative probability that an African American debtor selects Chapter 13 instead of Chapter 7. By 2013, African Americans bankruptcy filers are five percentage points more likely to choose Chapter 13, relative to Other debtors.[12] The pre-2011 interactions between $AfricanAmerican$ and calendar year show little or no evidence of a pre-Policy trend: the difference between African American and Other debtors is small,

[10] We avoid zeroes by using the log of the variable plus $1.

[11] Although we do not have individual-level data for jurisdictions outside of the Northern District of Illinois, we can run tract-level analysis, comparing outcomes in Chicago tracts to matched tracts outside Chicago. We run that analysis in Appendix B and obtain comparable results to those reported in the main text.

[12] The μ_k coefficients appear to decline in 2015 and 2016, perhaps reflecting a slowdown in enforcement. Figure 2 shows that DLS enforcement decelerated among African Americans around 2015.

negative, and generally insignificant. We conclude that the Emanuel policy's seizure of driver's licenses caused an increase in Chapter 13 filing rates, especially among African Americans. [13]

4.2 Mechanisms: Race and Distance

Prior work has argued that racial discrimination by attorneys explains the higher propensity of African American debtors, relative to Others, to file for Chapter 13. Another plausible hypothesis is that the higher propensity is caused by differences in background characteristics of African American and Other debtors. Evidence consistent with this hypothesis appears in Figure 5, which plots the ratio of (a) Chapter 13 filings during a given quarter to (b) DLS notices during the preceding two quarters by zip code. We view this ratio as a measure of the Chapter 13 "take up" rate among consumers who received DLS notices. Prior to the Emanuel policy, the ratio was virtually identical for African Americans and Others. After the Policy goes on-line, we see a divergence in the ratio, with DLS notices translating into Chapter 13 filings at a higher rate for African Americans than Others. This pattern suggests that license suspensions could be more costly to African Americans, on average, inducing them to file for Chapter 13 at a higher rate than Others.

One reason why license suspensions could be more costly for African Americans is that they are more likely to live in geographic areas with longer commutes to work, supermarkets, schools, and other destinations. To explore this hypothesis, we identify "long commute" debtors who are likely to place relatively high value on their licenses and cars, and therefore incur relatively high costs from license suspension. We assume a debtor has a "long commute" if he or she lives in a census tract that is either (a) classified by the FDA as a food desert or (b) in the top quartile of tracts as measured by percentage of residents who travel more than 45 minutes to work. Similarly, we define a "short commute" debtor

[13] Appendix Table E.1 shows that the Emanuel policy caused a shift in the composition of debtors filing for Chapter 13. The Table presents means for debtors who filed Chapter 13 petitions during the three years before the Emanuel policy began (2008-10) and for debtors who filed for Chapter 13 during the three years after (2012-14). Panel A shows that, post-Emanuel policy, Chapter 13 filers are more likely to be African American, be unmarried, have income below 200% of the poverty line, not own a home, and owe debt to the City of Chicago. Although there is no change in the proportion of filers who own a car, there is a sharp increase in the proportion of filers who own a car but not home. As Panel C shows, the majority of these filers are African American during the post-Emanuel policy period.

as one who lives in a tract that is not a food desert and is among the bottom 50% of tracts as measured by percentage of residents traveling more than 45 minutes to work. We estimate equation 1 separately on each subsample. Figure 6 reports the coefficients, showing relatively small and statistically insignificant effects of the Emanuel policy in short-commute tracts (Panel (b)), indicating that the policy-response among African American debtors is indistinguishable from the response among Other debtors (coefficient estimates are reported in Table 3, columns 2 and 3). In long-commute tracts (Panel (a)), by contrast, we observe a sharp post-policy response among African American debtors relative to Other debtors.[14] This result is consistent with the hypothesis that commuting time is an important determinant of Chapter 13 filings, but it is unclear why commuting time matters more for African Americans than Other debtors living in the same tracts. One possibility is that, even within a given tract, African Americans have longer commutes.

We explore this possibility by matching African American debtors to observationally identical Other debtors. Our matching algorithm is standard nearest-neighbor, propensity score matching with common support and no replacement (the procedure is described in more detail in Appendix A). Figure 7 illustrates the effect of matching; Table 4 reports the coefficients. We begin by reproducing the baseline regression in Panel (a). Matching on controls, as we do in Panel B, has little effect on the estimates, but matching on both census tract and observables has a marked effect, as we see in Panel (c). When African Americans are matched to Others who are not only observationally similar but also live in the same tract, there is a sizable but imprecisely estimated effect in 2012, but no observable effect in subsequent years. We view this as evidence that although the Emanuel policy had a larger effect on African Americans, the typical African American debtor has substantially different characteristics—especially geographic location—than the typical non-African American debtor. These differences rendered African Americans more sensitive to the license suspension policy implemented by Mayor Emanuel and therefore more likely to file for Chapter 13 bankruptcy, which allows them to recover their licenses.[15]

[14] We observe the same pattern—no effect in short-commute tracts and large effects in long-commute tracts—when we drop food deserts and compare tracts with relatively long and short commutes. We also observe the same pattern when we drop tracts in which one group (African American, Hispanic, or Other) accounts for more than one-third of the population.

[15] Our results reflect both responses along the "intensive margin" (increased demand for Chapter 13

4.3 Alternative Mechanisms

We have focused on one difference between Chapters 7 and 13 that can generate a preference for Chapter 13 among African Americans: Chapter 13 allows the debtor to recover seized assets, such as driver's licenses. Another potentially important difference is that attorney fees generally must be paid in full *before* a debtor files for Chapter 7, but can be paid in installments *after* a debtor files for Chapter 13. Liquidity constraints, in other words, can generate a preference for Chapter 13, as documented by Gross, Notowidigdo, and Wang (2014), among others. Because the Emanuel policy effectively placed thousands of drivers into default, it increased demand for bankruptcy generally and especially increased demand for Chapter 13 among liquidity-constrained drivers. Racial differences in liquidity constraints—not differences in commuting distances—might therefore explain the post-Emanuel policy increase in Chapter 13 filings among African Americans relative to Others.

This mechanism is inconsistent with the estimates reported in Figure 7, which explicitly control for liquidity by including (log) income, assets, and debt in the regressions as well as the matching algorithm. Panel (b), in other words, matches African American and Other debtors on liquidity.

We can, however, explore the role of liquidity using variation in law firm pricing. One firm in our sample, Legal Assistance Foundation (LAF), served indigent clients and charged no legal fees, regardless of chapter choice. Unsurprisingly, LAF's clients were liquidity constrained, as Figure 8B illustrates by plotting the median income of cases filed by LAF clients and by other firms. If liquidity constraints are the primary reason for the post-Emanuel policy rise in Chapter 13 filings, we are unlikely to observe an increase among LAF clients. Figure 8A plots the number of cases per year for LAF, showing an increase in the total number of Chapter 13 filings immediately after the Emanuel policy comes on-line. Figure 8C plots Chapter 13's share of filings, again showing a sharp post-Emanuel policy increase. What is most striking here is that the post-policy increase is sharpest for the

among consumers who would have filed for some type of bankruptcy in the absence of the policy) and responses along the "extensive margin" (increased demand for Chapter 13 among consumers who were unlikely to file for bankruptcy in the absence of the policy). Appendix C attempts to isolate responses along the extensive margin by focusing on consumers who had little or no reason to file for bankruptcy in the absence of the Emanuel policy.

debtors with no liquidity constraints, i.e., those represented by LAF. Consistent with the fact that this pro bono agency selects debtors who are very poor, regardless of race, Figure 8D shows that the post-policy increase is nearly identical for both African Americans and Other Debtors. We view these patterns as evidence that liquidity constraints do not fully explain the post-Emanuel policy increase in Chapter 13 filings by African Americans.

4.4 Effect on Total Filings

Our analysis has focused primarily on a compositional change: the Emanuel policy changed the composition of bankruptcy filings, increasing Chapter 13's share of filings, especially among African Americans. The Policy had effects on the *level* of filings as well. To show show this, we construct a synthetic control group of non-Chicago zip codes, located anywhere in the US, that are the nearest-neighbor matches for the Chicago zip codes in our data. We match Chicago and non-Chicago ("Control") zip codes using 2010 census data, including bankruptcy filing rate, Chapter 13's share of bankruptcy filings, median income, percent of residents below the poverty line, and percent of residents who were African American.[16] Figure 9 shows the annual per-capita filing rate for Chicago and Control zip codes. Panels (a) and (b) split the zip codes by race, with African American zip codes defined as those where African Americans account for over half of the population. Panel (a) shows little discernible difference in Chapter 7 filing rates between Chicago and Control zip codes during the post-Emanuel policy period, though African American filings in Chicago decline less sharply than filings in the Control zip codes. Panel (b), by contrast, shows a large difference in Chapter 13 filings, for both African Americans and Others: filing rates in Chicago diverge sharply from the Controls during the post-Emanuel policy period. Panel (c) shows the per capita filing rate for all types of bankruptcy, regardless of race. We see that the post-policy increase in Chapter 13s prevented total filings in Chicago from declining as sharply as they did in the Control zip codes.

We can use a simple difference-in-difference estimator to calculate the extent to which the Emanuel policy elevated total filings in Chicago relative to the Control zip codes. Table

[16] Section A of the Appendix describes the matching procedure in detail.

4 shows that, without the Emanuel policy, per capita bankruptcy filings in Chicago would have been .001 percentage points lower. Put differently, relative to the mean per capita filing rate in Chicago (.00431), filings in Chicago would have been over 20% lower in the absence of the Emanuel policy. Among African Americans, filings would have been over 35% lower.

To put this into perspective, there were about 17,000 bankruptcy filings in Chicago during 2012. Our estimates indicate that nearly 4,000 of these filings were caused by the Emanuel policy.

5 The Relative Importance of Attorney "Steering"

Our analysis shows that selection effects are an important explanation for racial disparities in consumer bankruptcy because Chapter 13 is attractive to consumers seeking to protect key assets such as automobiles and driver's licenses. Because of geographic disparities, including relatively longer commuting times, African American bankruptcy filers place a higher value on those assets than filers in other racial groups and, therefore, are more likely to file a Chapter 13 case.

Our data point to another potential selection effect: Chicago-area attorneys often specialize in one type of bankruptcy case (Chapter 7 or 13), and the attorneys who favor Chapter 13 are also the attorneys most often used by African American debtors. Indeed, two attorneys (Geraci and Semrad) account for nearly eighty percent of Chapter 13 filings by African Americans. To the extent that consumers select attorneys based on factors that are unrelated to their underlying case characteristics—such as distance (Lefgren, McIntyre, and Miller (2010)) or social networks (Miller (2015))—we may observe racial disparities in Chapter 13 simply because African Americans select attorneys who favor Chapter 13 and do so regardless of race.

Table 5 explores racial disparities in Chapter 13 after accounting for these potential selection effects. These regressions analyze the subset of Chapter 7 and 13 bankruptcy cased filed by African American and non-African American, non-Hispanic consumers—the comparison drawn in prior literature. Pro se filings are excluded because our goal is to

assess how much of the racial disparity in bankruptcy is attributable to law firm behavior. Columns (1) and (2) run a simple regression in which the dependent variable is a dummy equal to one if the consumer chose Chapter 13 (and equal to zero if she chose Chapter 7); the only regressor in Column (1) is the consumer's race, while Column (2) adds time fixed effects. Both columns yield roughly the same coefficient, showing that African Americans are about 25 percentage points more likely to file a Chapter 13 case, relative to non-Hispanic consumers. This coefficient is consistent with prior literature, such as Braucher, Cohen, and Lawless (2012), which finds a 26.1 percentage point difference between African American and White Chapter 13 filing rates (see Table 2 of that paper). Column (3) adds attorney fixed effects, which account for the possibility that some consumers tend to select attorneys with strong preferences for one style of bankruptcy. This control, by itself, reduces the size of the African American coefficient by over fifty percent (from 0.25 in Column (1) to 0.10 in Column (3)). Columns (4) and (5) rerun the analysis on two subsamples. "No COC Debt" is the subsample of consumers with no debt owed to the City of Chicago; "COC Debt" is the subsample with such debt. We create these subsamples in order to account for the selection effect documented in this paper: Chapter 13 is particularly attractive to consumers who owe debts to the City of Chicago and are therefore at risk of having their cars seized or licenses suspended. Once we separate the two subsamples in this way, the coefficient on the African American dummy drops by fifty percent again (from 0.10 in Column (3) to about 0.05 in Columns (4) and (5)).

Finally, in Columns (6) and (7), we rerun the analysis, but include zip code fixed effects, which help account for differences in commuting time across zip codes. This control causes the African American dummy to fall by over fifty percent again. Thus, with the full battery of controls, Chapter 13's share among African American consumers is only one or two percentage points higher than among non-Hispanic consumers. Selection effects might, therefore, be the primary driver of perceived racial disparities in bankruptcy.

6 Conclusion

It is well-understood that Chapter 13 is most valuable to distressed consumers hoping to retain assets they would lose in Chapter 7 or outside of bankruptcy. That well-

understood phenomenon provides an (at least partial) explanation for racial disparities in bankruptcy, as illustrated by Chicago's Emanuel policy. As the city increased the rate at which it seized driver's licenses and cars, residents increased the rate at which they filed for Chapter 13, which allows immediate recovery of these assets and permits discharge of city debt, neither of which is possible in Chapter 7. The increase in Chapter 13 filings was largest for African Americans, who are more likely to incur city debt and who appear to experience larger costs from asset seizure because they have longer commutes to work and other amenities. Thus, racial differences in debt burdens and in the costs of debt enforcement help explain well-documented racial disparities in bankruptcy filings.

Our findings suggest that Chapter 13 plays an important role in allowing the working poor to retain access to transportation. In this paper, Chapter 13's importance is driven, in part, by a quirk of the bankruptcy code: fines, such as parking tickets, can be discharged in Chapter 13, but not in Chapter 7. But even if this rule were eliminated, Chapter 13 would remain important to the working poor because it permits consumers to retain (and recover) assets that are vulnerable to collection by creditors. For example, a Chapter 13 filing allows a consumer to retain a vehicle that might otherwise be seized by a lender. Because of Chapter 13's importance to the working poor, it is puzzling that the same rules apply to both poor and non-poor debtors. For example, bankruptcy courts often require debtors to pay a minimum recovery to unsecured creditors (e.g., ten percent of outstanding debt).[17] A requirement like this renders Chapter 13 infeasible or unsuccessful for many poor debtors, as shown by Morrison and Uettwiller (2017). Courts might consider relaxing these rules for the working poor.

Our findings also suggest that, because Chapter 13 may function as the only avenue of relief for working poor faced with collection efforts (e.g., the Emanuel policy) that threaten their transportation options, the poor may have very weak bargaining power when they seek legal representation. Bankruptcy attorneys, therefore, are able to charge substantial fees for routine cases. Although Cook County is served by a large number of bankruptcy attorneys, eighty percent of African American debtors are represented by two law firms,

[17] Technically, this requirement is imposed by Chapter 13 trustees, with court consent, as discussed by Morrison and Uettwiller (2017).

suggesting substantial market power. These attorneys can be assured of payment, even though the vast majority of Chapter 13 cases are dismissed before the debtor completes the repayment plan, because attorney fees are paid first as the debtor submits payments pursuant to the plan. Poor debtors, therefore, have weak bargaining power, agree to large fees, but typically receive no discharge because their cases are dismissed. Bankruptcy courts might consider limiting Chapter 13 attorney fees, which would help mitigate the effects of the disparity in bargaining power.

Finally, our findings point to the role of non-bankruptcy policies (such as the City of Chicago's enforcement policies) in driving racial disparities in bankruptcy. In Chicago, these disparities would attenuate if the city were to reform its policies for collecting fines. Relative to other large cities such as Los Angeles and New York, Chicago allows its residents to accumulate large balances before taking steps such as seizing a vehicle or suspending a driver's license, as discussed in Sanchez and Kambhampati (2018). Not only is the city slow to collect, but there is no statute of limitations on parking tickets in Chicago (unlike Los Angeles and New York, which have 5 and 8 year limitations periods, respectively). Thus, by the time a driver's license is suspended, the outstanding balance may be much larger than a consumer's ability to pay, triggering a bankruptcy filing. If the city were to act more quickly to collect fines, or if parking tickets were subject to a limitations period, consumers would have smaller balances when collection efforts commenced and would be more likely to pay those balances (or enter a repayment plan) without a bankruptcy filing.

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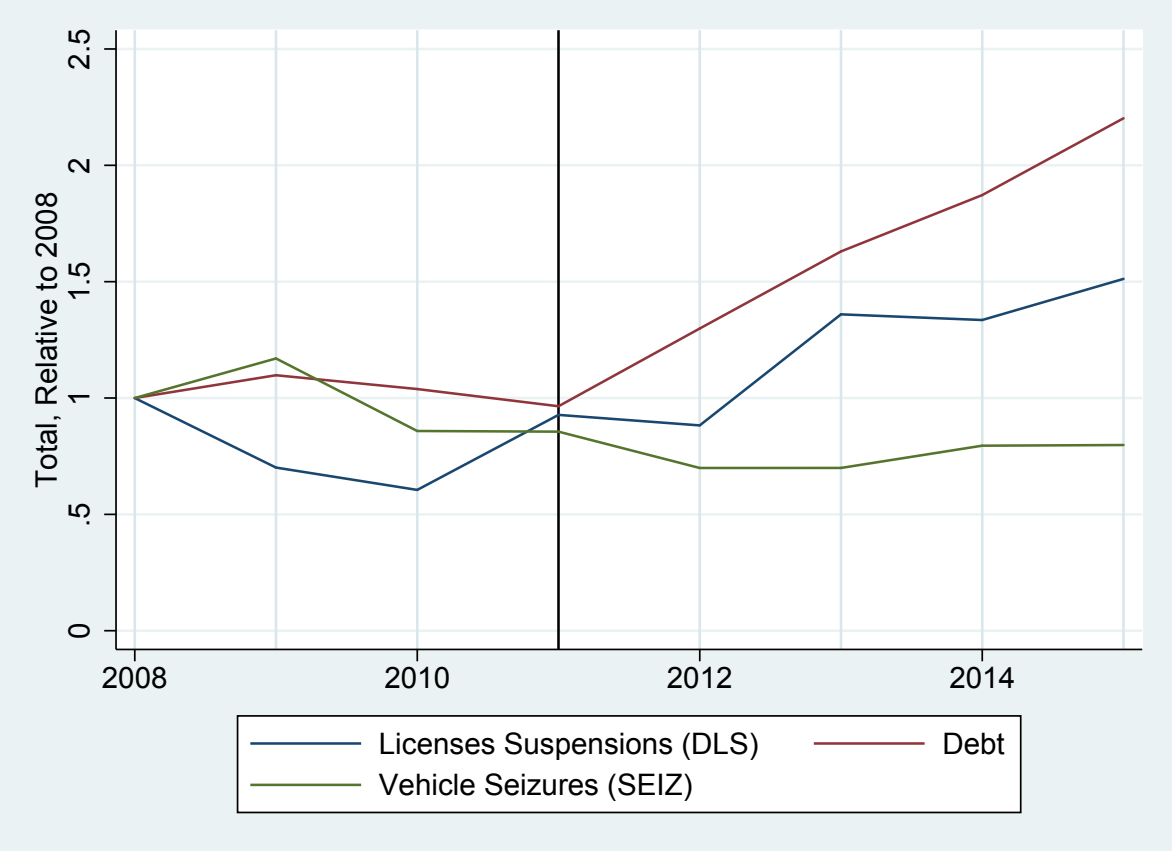
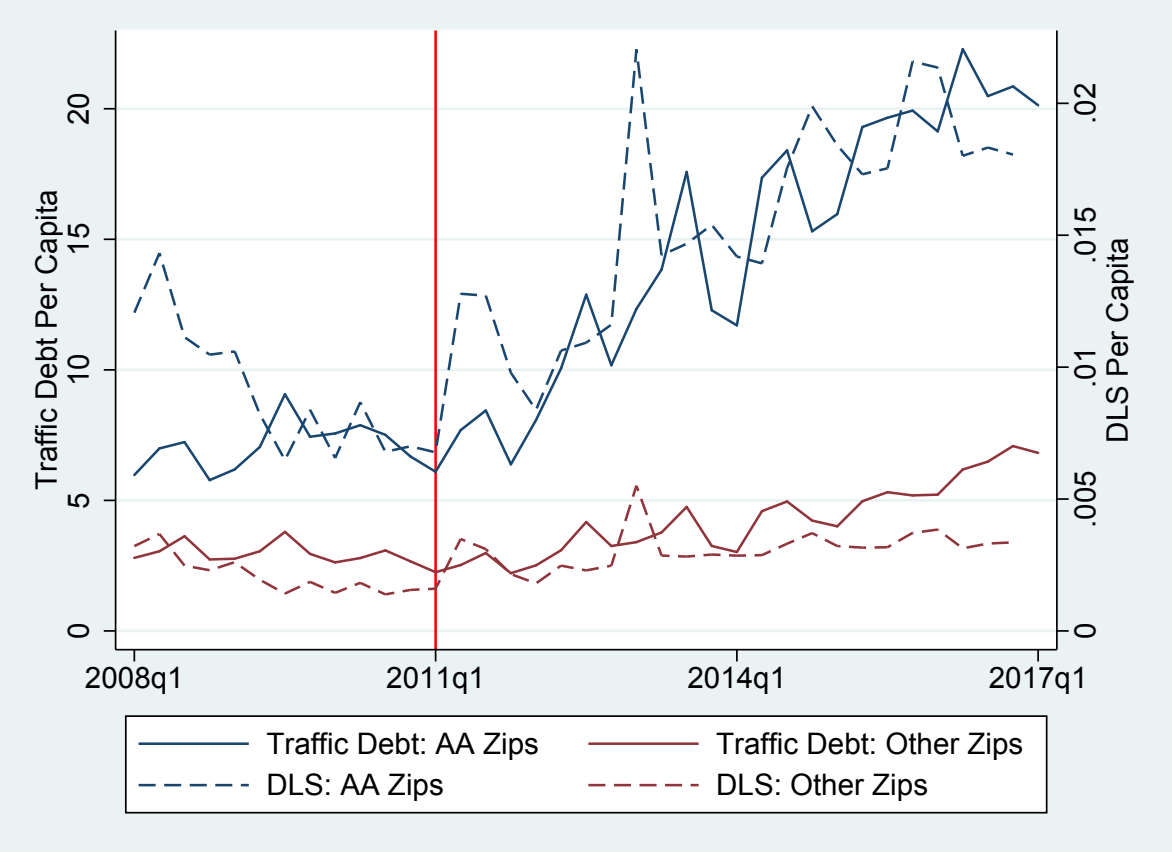
7 Figures

FIGURE 1: Chicago Enforcement Policy, 2008–2016



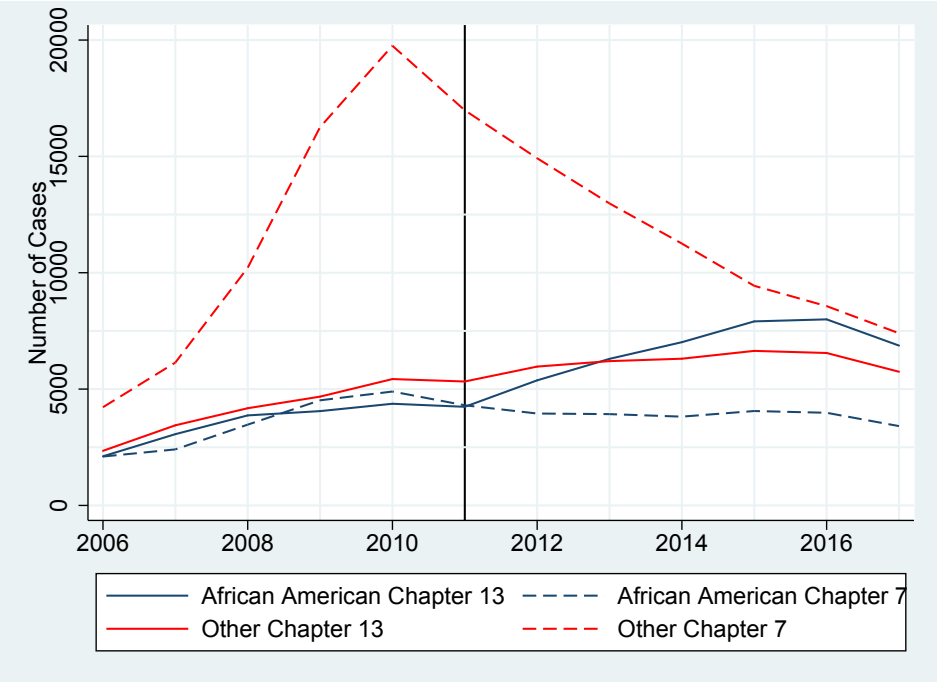
Note: This figure summarizes zip-level data obtained through a FOIA request from the City of Chicago. We calculate total number of license suspensions and vehicle seizures as well as the total value of outstanding traffic debt owed to the city, by year. We normalize the totals by 2008 values. Thus, this plot shows enforcement and debt levels, relative to 2008 values. The vertical line identifies the year 2011, when the Emanuel Policy commenced.

FIGURE 2: Debt and License Suspensions Per Capita, African American and Other Zip Codes

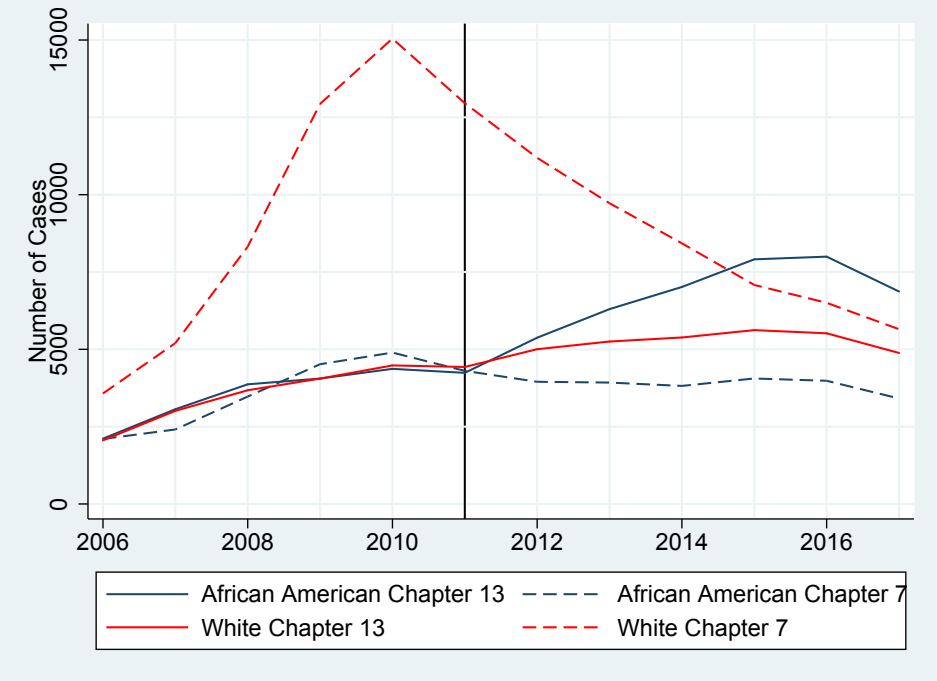


Note: This figure uses the same zip-code-level FOIA data described in Figure 1, but calculates totals separately for zip codes that are predominantly African American and for other zip codes ("Other"). The vertical line identifies the year 2011, when the Emanuel Policy commenced.

FIGURE 3: Total Bankruptcy Filings By Race



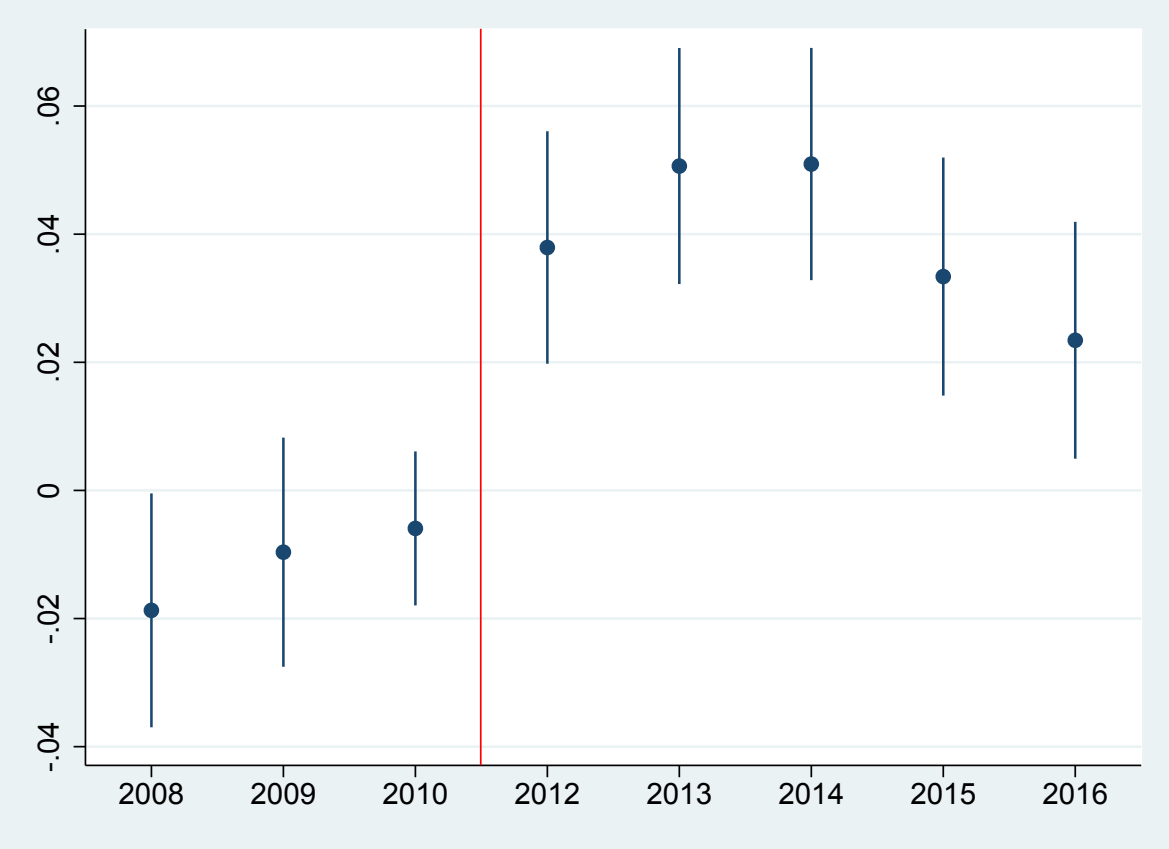
(a) African Americans and non-African Americans ("Others")



(b) African Americans and Whites

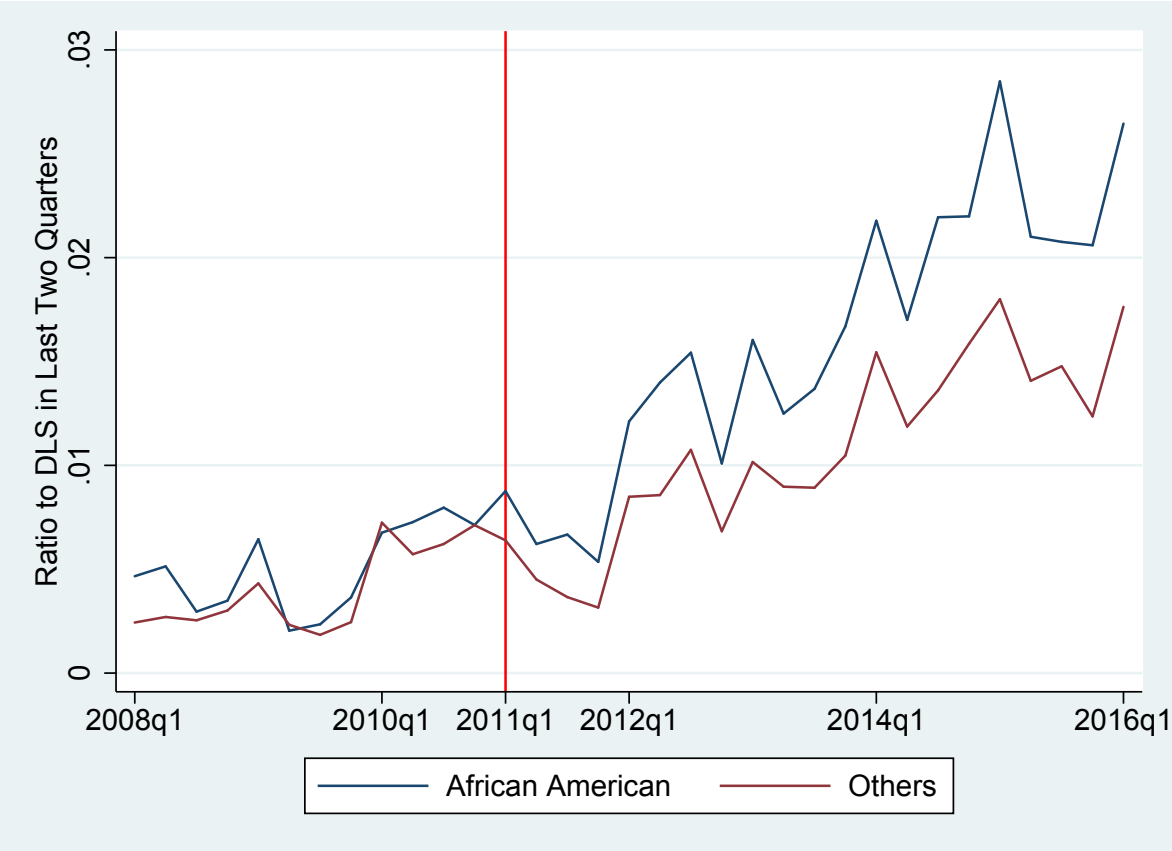
Note: This figure uses individual-level data drawn from bankruptcy court records. We calculate total filings per year by race, where race is imputed using the algorithm described in Section 3. Panel A compares African American filers to all other bankruptcy filers. Panel B compares African Americans to White filers. The vertical lines identify the year 2011, when the Emanuel Policy commenced.

FIGURE 4: Event-Study Difference-in-Difference Estimates



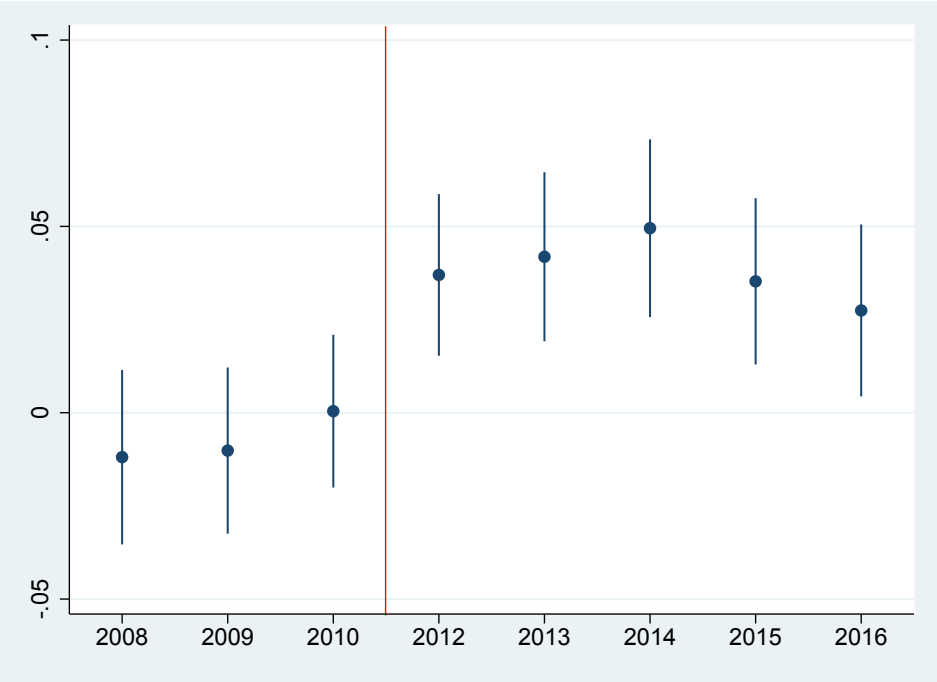
Note: This figure implements our baseline event-study specification, Equation (1) in the main text, and presents estimates of the interactions (μ_k) between $AfricanAmerican$ and year dummies. The omitted year is 2011, when the Emanuel policy was initiated. The dots provide the point estimates; the whiskers show standard errors. The actual estimates can be found in Column (1) of Table 3.

FIGURE 5: Ratio of Bankruptcy Filings to DLS Notices by Race

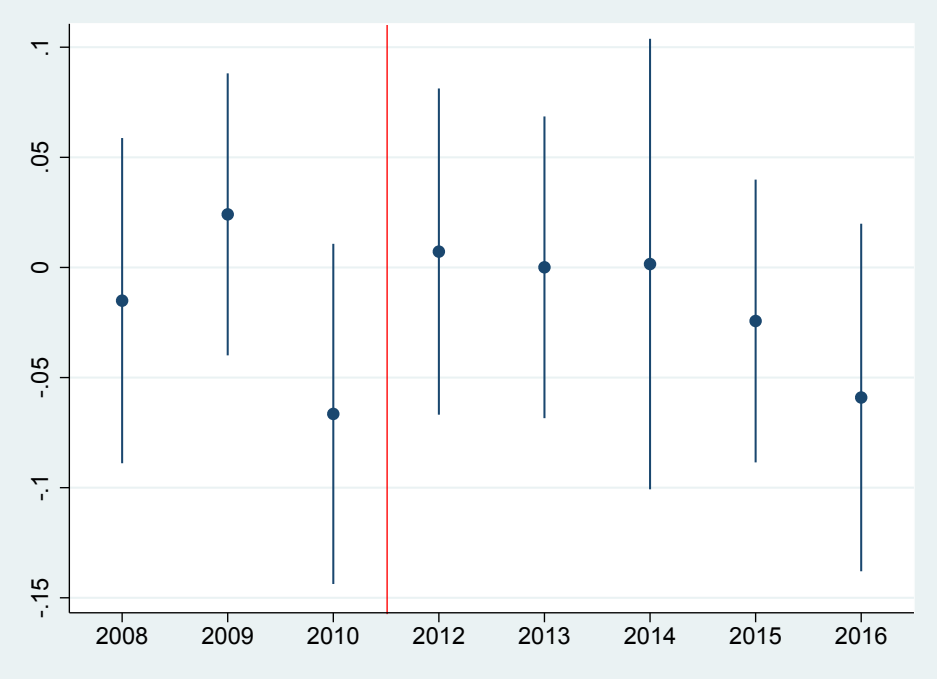


Note: This figure plots the ratio of (a) number of Chapter 13 filings during the current quarter (q) to (b) number of DLS notices during the preceding two quarters ($q-1$ and $q-2$). This ratio is therefore a measure of the bankruptcy "take up" rate among consumers who have received DLS notices. The vertical line identifies the year 2011, when the Emanuel Policy commenced.

FIGURE 6: Event-Study Difference-in-Difference Estimates by Commuting Time



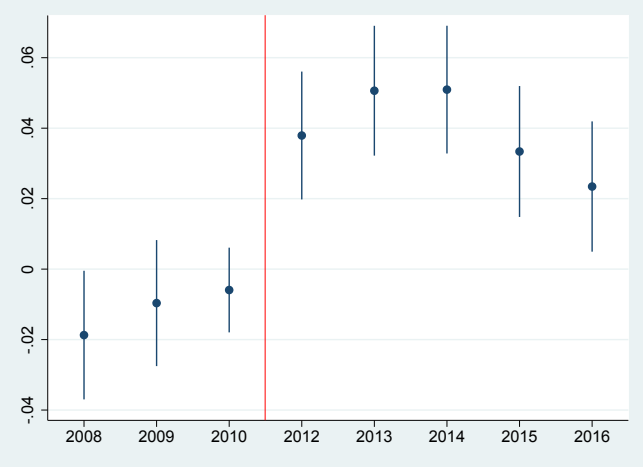
(a) Long Commute Sample



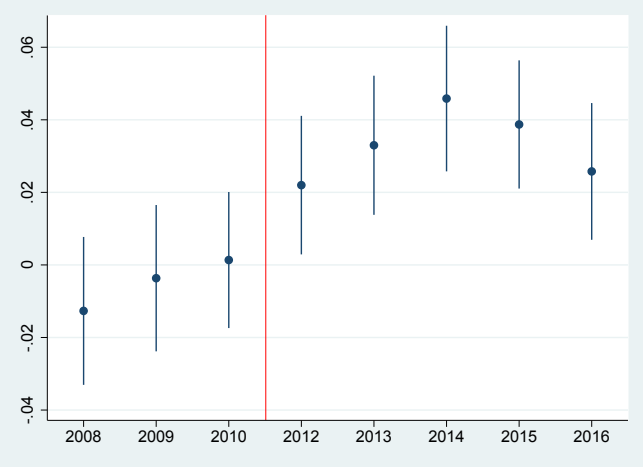
(b) Short Commute Sample

Note: This figure presents estimates of our baseline event-study specification, Equation (1) in the main text, on separate subsamples: (a) debtors living in a census tract that is classified by the FDA as a food desert or is in the top quartile of tracts as measured by percentage of residents traveling more than 45 minutes to work ("long commute"), and (b) debtors living in a tract that is not a food desert and is among the bottom 50% of tracts as measured by percentage of residents traveling more than 45 minutes to work ("short commute"). The dots show estimates of the interactions (μ_k) between $AfricanAmerican$ and year dummies. The whiskers show standard errors. The vertical lines identify the year 2011, when the Emanuel Policy commenced. Estimates and standard error are also reported in Columns (2) and (3) of Table 3.

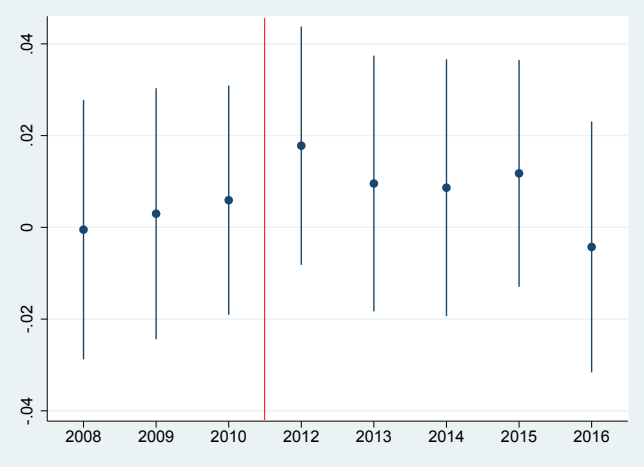
FIGURE 7: Event-Study Difference-in-Difference Estimates: Effect of Matching African American to Other Debtors



(a) No Matching



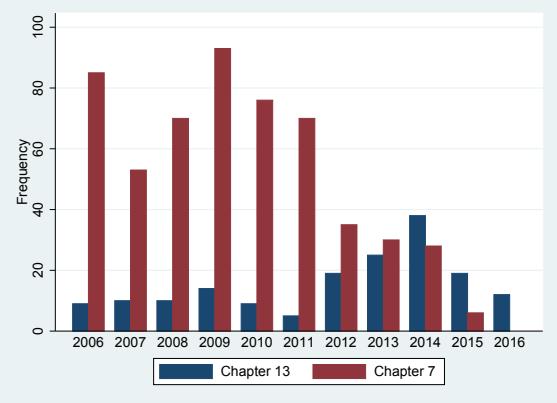
(b) Matching on Controls



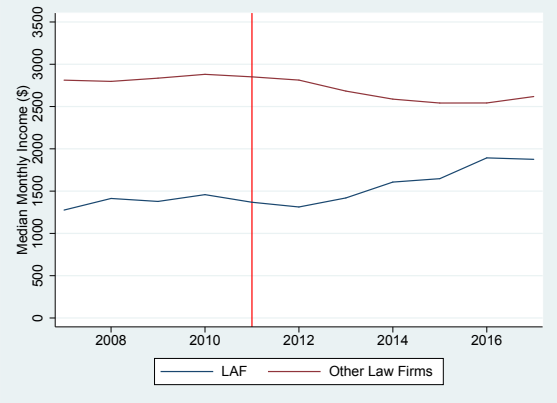
(c) Matching on Tract and Controls

Note: This figure re-estimates our baseline event-study specification, Equation (1) in the main text, on: (a) the full sample; (b) a sample consisting of African Americans matched to non-African American debtors, where matching is based on case controls; and (c) a sample consisting of African Americans matched to non-African American debtors, where matching is based on both case controls and census tract. The dots show estimates of the interactions (μ_k) between $AfricanAmerican$ and year dummies. The whiskers show standard errors. The vertical lines identify the year 2011, when the Emanuel Policy commenced. Estimates and standard error are also reported in Columns (4) and (5) of Table 3.

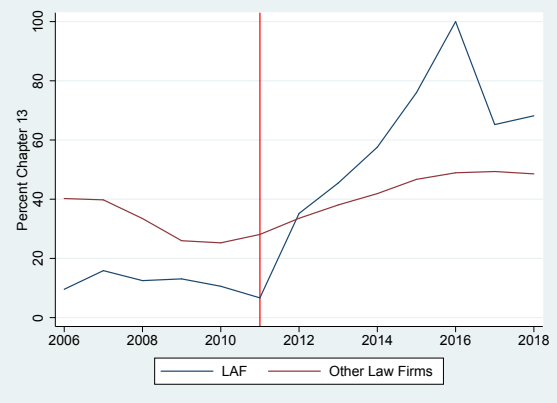
FIGURE 8: Using Law Firm Pricing to Test Effects of Liquidity Constraints



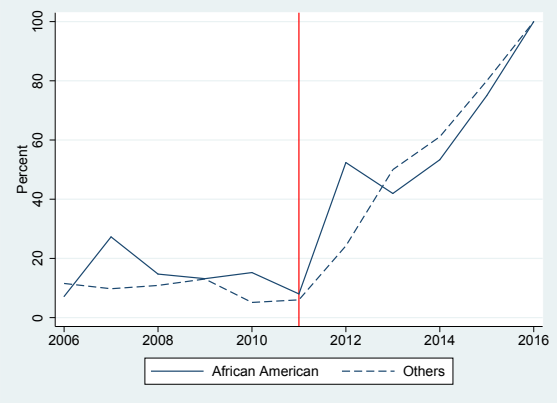
(a) Number of Cases Filed per Year by LAF



(b) Median Debtor Income: LAF vs. Other Firms



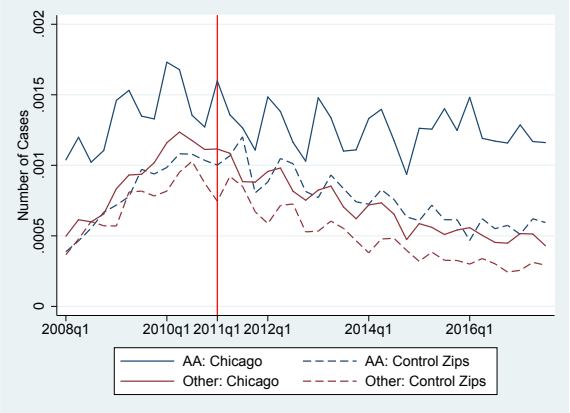
(c) Chapter 13's Share of Filings: LAF vs. Other Firms



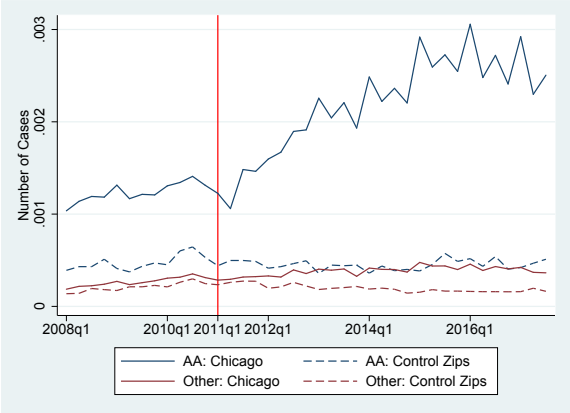
(d) Chapter 13's Share Among LAF Filings by Race

Note: This figure presents summary statistics for Legal Assistance Foundation (LAF), a non-profit that provides bankruptcy representation to indigent clients in the Chicago area. Panel (a) presents total filings per year by chapter, (b) compares the median monthly income of LAF clients to the income of debtors represented by other firms, (c) compares Chapter 13's share of filings at LAF versus other firms, and (d) shows Chapter 13's share of filings by LAF by race. The vertical lines identify the year 2011, when the Emanuel Policy commenced.

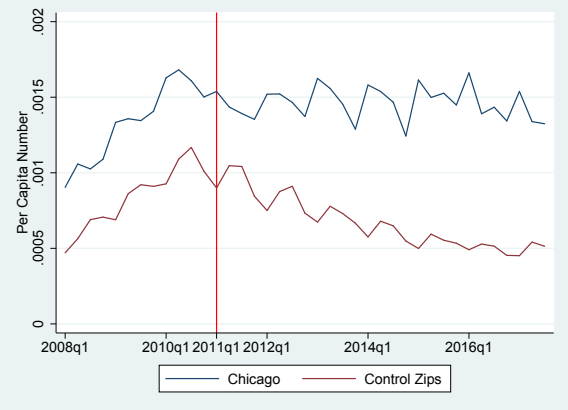
FIGURE 9: Effect on Total Filings



(a) Chapter 7 Filings



(b) Chapter 13 Filings



(c) Total Filings

Note: This figure compares filing rates in Chicago zips to rates in a synthetic "Control" group of zips located throughout the United States. The matching procedure is described in Appendix Section A. Panels (a) and (b) compare African American and Other zips in Chicago to matched zip codes in the Control group. A zip code is deemed "African American" if over 50% of residents are African American, based on 2010 census data. Panel (c) compares total filings, regardless of race, in Chicago and the Control group.

8 Tables

Table 1: Summary Statistics

(a) Chapter 13 Cases

	Mean	**SD**
% African American	40.51	
Assets	107,214	459,858
Debt	150,654	899,061
Secured debt (among those with this debt)	134,442	982,443
% real estate	44.44	
% car owner	82.74	
% secured debt	80.80	
Monthly income	3,605	14,421
Monthly expense	2,892	4,488
% below 200% of poverty line	37.92	
Observations	154,620	

(b) Chapter 7 Cases

	Mean	**SD**
% African American	17.93	
Assets	108,136	233,903
Debt	209,036	5,569,225
Secured debt (among those with this debt)	177,894	286,662
% real estate	45.17	
% car owner	75.39	
% secured debt	68.30	
Monthly income	2,809	6,937
Monthly expense	3,210	59,066
% below 200% of poverty line	50.07	
Observations	286,666	

Note: Here we present summary statistics for Chapter 13 and Chapter 7 filers in the Northern District of Illinois during our sample period, 2008 through 2016.

Table 2: Commuting Distance, Race, and Bankruptcy Filing Rates, by Zip Code, in the Northern District of Illinois (including Chicago)

Distance Quintile	Distance Measure: % Travel $>$ 45 min. or Food Desert	% Travel $>$ 45 min.	% Food Desert	% African American	% Chapter 13	Chapter 13 Filings per Thousand	Median Income
1	11.86	11.76	0.12	0.64	12.04	0.40	52.61
	(2.57)	(2.61)	(0.66)	(1.65)	(8.21)	(0.35)	(5.24)
2	23.31	21.46	2.10	7.98	17.88	1.08	54.69
	(3.24)	(5.47)	(5.15)	(19.03)	(10.17)	(1.38)	(5.77)
3	38.90	26.94	15.14	13.10	24.61	1.53	49.27
	(5.96)	(7.91)	(12.44)	(20.57)	(11.14)	(1.23)	(9.53)
4	60.62	22.56	48.06	26.78	28.39	2.47	47.87
	(6.81)	(10.40)	(10.99)	(32.99)	(14.45)	(2.29)	(10.37)
5	86.60	23.89	81.85	39.06	32.72	3.19	40.88
	(10.30)	(9.32)	(14.22)	(35.56)	(15.85)	(2.68)	(9.04)
Obs.	212	212	212	212	212	212	212

Note: This table stratifies Cook County zip codes (n=212) into quintiles of "Distance," measured as the percent of zip code residents who travel at least 45 minutes to work or live at least one mile from a supermarket ("food desert"). Within each quintile, we present mean zip code characteristics and associated standard deviations (in parentheses).

Table 3: Effect of Emanuel Policy on Chapter 13's Share of Bankruptcy Filings

	Baseline (1)	Long Commute (2)	Short Commute (3)	Matching (4)	Matching Within Tract (5)
AA × year=2008	-0.019*	-0.012	-0.015	-0.013	-0.00050
	(0.044)	(0.318)	(0.688)	(0.223)	(0.972)
AA × year=2009	-0.0096	-0.010	0.024	-0.0037	0.0030
	(0.289)	(0.371)	(0.459)	(0.722)	(0.831)
AA × year=2010	-0.0059	0.00042	-0.067	0.0014	0.0059
	(0.331)	(0.968)	(0.091)	(0.888)	(0.642)
AA × year=2011	.	.	.	.	.
	.	.	.	.	.
AA × year=2012	0.038**	0.037**	0.0072	0.022*	0.018
	(0.000)	(0.001)	(0.848)	(0.024)	(0.179)
AA × year=2013	0.051**	0.042**	0.000064	0.033**	0.0095
	(0.000)	(0.000)	(0.999)	(0.001)	(0.501)
AA × year=2014	0.051**	0.050**	0.0015	0.046**	0.0086
	(0.000)	(0.000)	(0.976)	(0.000)	(0.545)
AA × year=2015	0.033**	0.035**	-0.024	0.039**	0.012
	(0.001)	(0.002)	(0.456)	(0.000)	(0.350)
AA × year=2016	0.023*	0.027*	-0.059	0.026**	-0.0043
	(0.013)	(0.020)	(0.142)	(0.007)	(0.759)
Zip or Tract Fixed Effect	Yes	Yes	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes	Yes	Yes
Case Controls	Yes	Yes	Yes	Yes	Yes
Observations	259,390	116,652	31,539	154,225	55,259

Note: This table presents estimates of model 1, which predicts the probability that a bankruptcy filer chooses Chapter 13 (instead of Chapter 7). Column (1) estimates the model on the full sample, Columns (2) through (5) re-estimate the model using different subsamples. Column (2) limits the sample to consumers living in "long commute" census tracts, defined as tracts either (a) classified by the FDA as a food desert or (b) in the top quartile of tracts as measured by percentage of residents who travel more than 45 minutes to work. Column (3) limits the sample to consumers in "short commute" tracts, defined as tracts that are not food deserts and are among the bottom 50% of tracts as measured by percentage of residents traveling more than 45 minutes to work. Columns (4) and (5) limit the sample to African American consumers and matched non-African Americans. Column (4) matches on observables; Column (5) matches on observables as well as census tract. Parentheses present p-values; the symbols have the following meanings: * $p < 0.05$ and ** $p < 0.01$.

Table 4: Effect of Emanuel Policy on Total Filings

Per Capita Number of Cases	All Zips (1)	African American Zips (2)	Other Zips (3)
Chicago	0.00081**	0.0024*	0.00057*
	(0.008)	(0.038)	(0.018)
Post-Policy	-0.00089**	-0.00035	-0.0012**
	(0.000)	(0.172)	(0.000)
Chicago × Post-Policy	0.0010**	0.0035**	0.00053*
	(0.000)	(0.000)	(0.022)
Dependent Variable Mean	0.00431	0.00914	0.00383
Zip Controls	Yes	Yes	Yes
Observations	1,320	320	1,000

Note: This table implements a simple difference-in-difference (DD) regression to estimate the effect of the Emanuel Policy on total filings in Chicago. We first match each Chicago zip to its nearest-neighbor zip, located anywhere in the United States (Appendix A describes the matching procedure). We regress the total filings per capita on a dummy for Chicago (*Chicago*), a dummy identifying years after the Emanuel Policy goes on-line (*Post-Policy*), the interaction between *Chicago* and *Post-Policy*, and case controls. The coefficient of interest is *Chicago* × *Post-Policy.* Column (1) estimates the DD model on the full sample; columns (2) and (3) reestimate the model on African American zip codes and Other zip codes, respectively. A zip code is deemed African American if 2010 census data indicate that at least 50% of residents were African American. Parentheses present p-values; the symbols have the following meanings: * $p < 0.05$ and ** $p < 0.01$.

Table 5: Asssessing "Racial Steering" After Accounting for Selection Effects

	(1)	(2)	(3)	No COC Debt (4)	COC Debt (5)	No COC Debt (6)	COC Debt (7)
African American	0.25**	0.24**	0.10**	0.052**	0.046**	0.022**	0.010**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.008)
Year-Quarter	No	Yes	Yes	Yes	Yes	Yes	Yes
Law Firm	No	No	Yes	Yes	Yes	Yes	Yes
Zip Code	No	No	No	No	No	Yes	Yes
Observations	213,263	213,263	205,103	137,540	63,607	137,540	63,607

Note: This table shows that a dummy for race (*African American*) is large and highly significant in regressions that do not account for selection effects, but drops substantially in size in regressions that do. In each column, we estimate the probability that a bankruptcy filer selects Chapter 13 (instead of Chapter 7). Column (1) is a simple regression using the full sample, but includes no controls other than *African American*. Column (2) adds case controls. Column (3) adds attorney fixed effects, which account for the fact that some law firms specialize in Chapter 13, regardless of race. Columns (4) and (5) split the sample between debtors with debt to the City of Chicago (COC) and those without such debt. These cuts recognize that Chapter 13 is attractive to debtors with COC debt, regardless of race. Columns (6) and (7) repeat the analysis, but include zip code fixed effects, which account for differences across debtors in travel time and other zip-level demographics. Parentheses present p-values; the symbols have the following meanings: * $p < 0.05$ and ** $p < 0.01$.

Appendices

A Procedure for Matching Individuals and Zip Codes

We perform two types of matching in this paper. We conduct individual-level matching to explore the possibility that, once we limit our sample to African Americans and Others who are comparable on observables (including driving distance), the effect of the Emanuel policy may disappear. The analysis based on this matching is reported in Section 4.2. We also conduct zip code-level matching to explore the effect of the Emanuel policy on total filings in Chicago relative to a synthetic control group consisting of matched zip codes outside Chicago. The analysis based on this matching is reported in Section 4.4.

For both types of matching, we implement propensity score matching using the Stata package *psmatch2* Version 4.0.11. We used nearest-neighbor matching with common support and no replacement.

We used a probit regression to estimate the propensity score. In the case of individual-level matching, the dependent variable was a dummy equal to one if the individual was African American and zero otherwise. The independent variables included case controls (such as assets, liabilities, and monthly income and expenses) from the Federal Judicial Center Integrated Database (IDB). In some specifications, we also matched on census tract fixed effects. Table E.2 shows the covariate balance between African American and Other filers after matching on individual characteristics (Panel B) and after matching on both individual characteristics and census tract (Panel C).

When we conducted zip code-level matching, the dependent variable equaled one if a zip code was located in the city of Chicago and zero otherwise (i.e., if the zip code was anywhere else in the United States). The controls included zip code-level variables such as percentage African American, percentage Hispanic, median household income, percentage living in a food desert, percentage traveling over 45 minutes to work, per capita number of Chapter 13 filings in 2010, and Chapter 13's share of consumer bankruptcies in 2010. Table E.3 shows the covariate balance between the two groups.

B Estimation Using Zip Code-Level Data

In the main text, we analyze the Emanuel policy using individual-level data from Cook County. An alternative strategy is to estimate, at the zip code level, Chapter 13's share of bankruptcy filings during the months before and after Emanuel took office as Mayor. The advantage of this approach is that it allows us to use data from other counties as a control group (we do not have individual-level data for counties outside Cook). We can run a triple-difference regression that estimates the change in Chapter 13's share (i) after Mayor Emanuel took office (ii) among African American zip codes relative to non-African American zip codes (iii) in Cook County zip codes relative to zip codes in counties unaffected by the change in Mayor Emanuel's policy ("Control Zips"). This specification is estimated by the following equation:

$$\begin{aligned} O_{zq} = AA_z + \textit{Post-Emanuel}_q + \textit{Cook}_z + \\ AA_z \cdot \textit{Cook}_z + AA_z \cdot \textit{Post-Emanuel}_q + \textit{Post-Emanuel}_q \cdot \textit{Cook}_z + \\ AA_z \cdot \textit{Post-Emanuel}_q \cdot \textit{Cook}_z + \epsilon_{zq} \end{aligned} \tag{2}$$

where O_{zt} is Chapter 13's share of bankruptcy filings in zip code z during quarter q; AA_z indicates whether the zip code is predominantly African American; $\textit{Cook}_z$ identifies zip codes in Cook County; and $\textit{Post-Emanuel}_q$ identifies quarters after Mayor Emanuel took office. We define a zip code as "African American" if African Americans account for at least seventy percent of the population.

We select Control Zips from throughout the United States using nearest-neighbor matching: For each Cook County zip code, we use propensity-score matching to select three zip codes outside Cook County ("nearest neighbor") that are most similar in 2010 (the year before Mayor Emanuel took office) along the following dimensions: Chapter 13's share of bankruptcy filings, per capita Chapter 13 filing rate, percentage of residents who commute more than 45 minutes to work, percentage of residents living within a food desert, percentage African American, percentage Hispanic, median household income, and percentage of population with income less than $15,000 per year (an approximation of the poverty

line).[18].

Figure D.1 presents the raw statistics, plotting the share of Chapter 13 for Cook County ("treatment") and Control Zips ("control"). Treatment and control track each other closely through 2010, but then diverge, with an increase in Cook County relative to Control Zips.

Table E.6 implements the model in equation 2. We begin with simple models that account only for race, geography (Cook County versus other locations), and a time trend centered on the end of the recession. Column (1) confirms that, across all zip codes, Chapter 13 accounts for a substantially larger share of bankruptcy filings (21 percentage points larger) in African American zip codes than in other zip codes. Column (2) shows that Chapter 13's share is larger (by about 8.8 percentage points) for African Americans living in Cook County than African Americans living elsewhere. To put this into perspective, Chapter 13's share of bankruptcies in Cook County during 2010 was 44 percent in African American zip codes and 19 percent in other zip codes; outside Cook County, Chapter 13 accounted for 40 percent of filings in African American zip codes and 19 percent in other zip codes.

Column (3) estimates our main specification, equation 2, where the coefficient of interest is the triple-interaction, *African American x Post-Emanuel x Cook*. This is our difference-in-difference-in-difference (DDD) estimator. Although Chapter 13's share during the Post-Emanuel policy period is declining on average across all zip codes (*Post-Emanuel*), it is increasing in Cook County relative to zip codes outside the county, consistent with the hypothesis that the Emanuel policy elevated Chapter 13 filings in Cook County. The triple interaction indicates that the policy caused a 4.4 percentage point increase in Chapter 13's share of bankruptcies in African American zip codes relative to other zip codes in Cook County, relative to the same difference in other counties. This is a ten percent increase relative to Chapter 13's share of filings in Cook County African American zip codes during 2010.

[18]We have verified that our results are virtually the same (but less precise) when we limit the Control Zips to one nearest-neighbor for each Cook County zip code. Our results are also the same when we exclude Cook County zip codes with propensity scores that fall outside the maximum and minimum of the Control Zip propensity scores.

Columns (4) and (5) add zip code and year fixed effects. Zip code fixed effects account for heterogeneity across zip codes, which may be particularly important in this setting, where the control zip codes are drawn from different counties. In both columns, the DDD estimates decline slightly (to about 3.5 percent), but still represent about an eight percent increase relative to Chapter 13's share in 2010.

C Heterogeneity in Policy Impact

In this appendix, we identify two margins along which we expect to see relatively large or small effects, assuming the Emanuel policy caused an increase in Chapter 13 filings.

We expect to see little or no effect among consumers who did not own cars and therefore were largely unaffected by the policy. However, because we measure car ownership at the time of the bankruptcy filing, the absence of car ownership does not imply the absence of an effect. The consumer could have lost her car due to the Policy, but filed for bankruptcy after the car had been seized and sold off (making it impossible to recover). To address this possibility, we analyze the subset of consumers who both (a) list no car ownership and (b) do not list any debt to the City of Chicago at the time of their bankruptcy filings. Figure D.2 reports estimates from running Equation (1) on this subsample, showing no positive effect of the Emanuel policy on the relative likelihood of African Americans to file for Chapter 13. If anything, they become less likely to file.

On the other hand, we expect to observe large effects among distressed consumers who (a) saw little benefit to bankruptcy prior to the policy change but (b) obtained a large benefit afterward. Potential proxies for (a) are income and assets. Bankruptcy is a legal device for protecting income (in Chapter 7) and assets (in Chapter 13) from creditor collection efforts. Consumers with meager income and assets ("low benefit debtors") derive less benefit from bankruptcy, which is in part why Sullivan, Warren, and Westbrook (2001), among others, have called bankruptcy a "middle class phenomenon." A potential proxy for (b) is occupation: consumers with jobs that require a license or a car (e.g., taxi drivers) are much more likely to benefit from Chapter 13 if these assets are seized through the Emanuel policy.

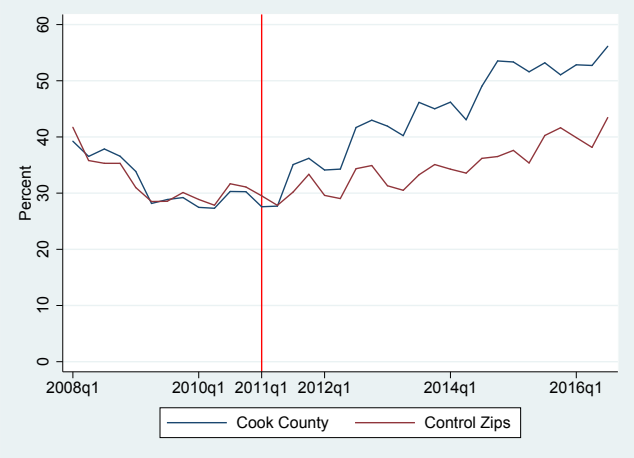
Figure D.3A implements our proxy for (a). Here, we define "low benefit debtors" as those who are not homeowners, have no secured debt, have no non-exempt property, and have annual income below 150% of the poverty line. By limiting the sample to non-homeowners, we exclude one of the principal reasons for using Chapter 13 (to save your home), as discussed in White and Zhu (2010). Similarly, by excluding consumers with secured debt, we rule out another common reason for using Chapter 13: to protect assets from foreclosure. Non-exempt property consists of assets that would be liquidated in Chapter 7 (every state allows consumers to retain certain assets—"exempt property"—even if they file for Chapter 7; the remaining assets are called "non-exempt"). If a consumer has no non-exempt property, she has no assets that are at risk of liquidation in Chapter 7. Equivalently, she has no assets that can be protected through a Chapter 13 filing. Finally, by focusing on debtors with low incomes, we limit our sample to consumers who have relatively small incentive to use any form of bankruptcy, because they are unlikely to be subject to creditor collection efforts if they are sufficiently poor. Figure D.3A shows that the Emanuel policy had a strong effect on "low benefit" consumers, with a sharp post-Emanuel policy increase among both African Americans and other races.

Figure D.3B implements our proxy for (b), i.e., consumers who saw a large benefit from Chapter 13 after the advent of the Emanuel policy. Here we analyze the subset consisting of all "low benefit debtors", but compare "drivers" to other debtors. We define a consumer as a "driver" if the bankruptcy petition listed an occupation with the word "driver" in it. We view this as a proxy for debtors who are highly likely to see a benefit in filing for Chapter 13 if their cars or licenses are seized. Figure D.3B confirms that, prior to the Emanuel policy, Chapter 13 accounted for a relatively small share (around 20 percent) of bankruptcy filings by low-benefit debtors, and among these debtors, drivers were about as likely to file for Chapter 13 as other filers. After the advent of the Emanuel policy, we observe a sharp separation between drivers and other low-benefit debtors. This separation, however, does not appear to be larger for African Americans than other races. Our sample is too small to permit strong inferences, but this (tentative) finding is consistent with our hypothesis that racial differences in the propensity to file for Chapter 13 reflect differences in the value placed on transportation. Once we condition on a group of debtors who equally value

transportation (drivers), racial differences attenuate.

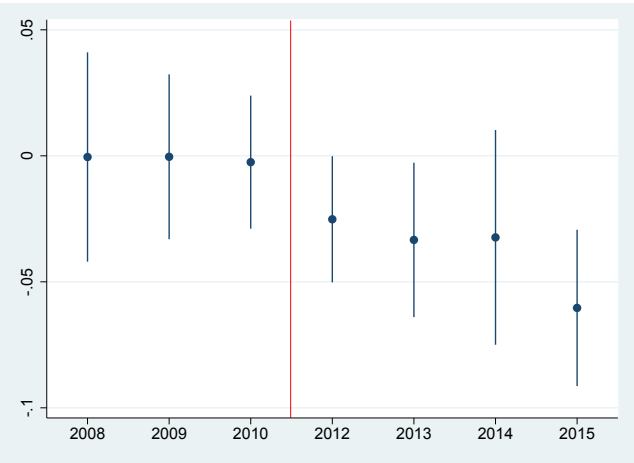
D Appendix Figures

FIGURE D.1: Chapter 13's Share of Bankruptcy Filings:
Cook County vs. Control Zip Codes



Note: This figure plots Chapter 13's share of bankruptcy filings among (a) Cook County zip codes and (b) a synthetic control group consisting of zip codes, throughout the Country, that were matched to the Cook County zip codes. As discussed in Appendix B, for each Cook County zip code, we selected three zip codes that were nearest-neighbors as measured by 2010 data. The vertical line identifies the year 2011, when the Emanuel Policy commenced.

FIGURE D.2: Effect of Emanuel Policy on Subset of Consumers Who Do Not Own Cars and Have No City Debt



Note: This figure plots coefficients from estimating our baseline event-study specification (Equation 1 in the main text) on a subsample of consumers who should be unresponsive to the Emanuel Policy: consumers whose bankruptcy filings list (a) no car ownership and (b) no debt to the City of Chicago. The vertical line identifies the year 2011, when the Emanuel Policy commenced.

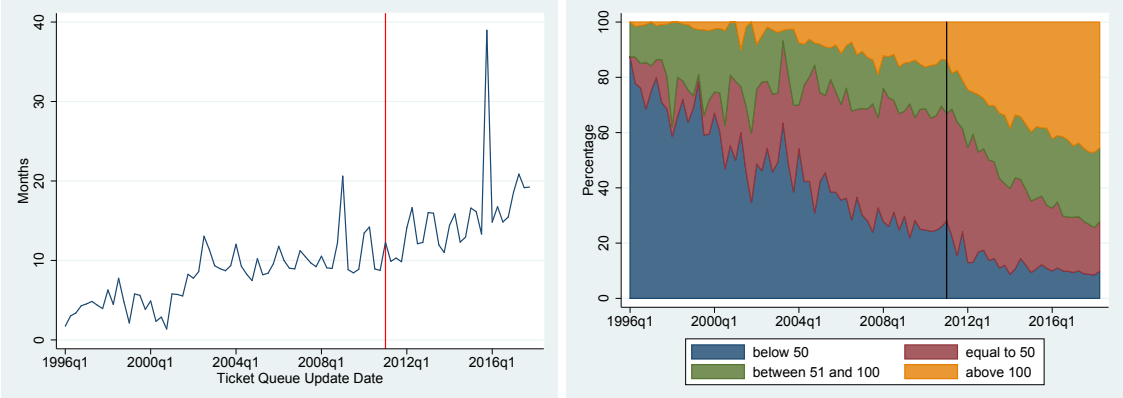
FIGURE D.3: Proportion of Chapter 13 Filings Involving "Low Benefit" Debtors

(a) Chapter 13's Share of Filings Among "Low Benefit" Consumers

(b) Chapter 13's Share Among "Low Benefit" Consumers: Drivers vs. Non-Drivers

Note: This figure plots coefficients from estimating our baseline event-study specification (Equation 1 in the main text) on subsamples of consumers who we hypothesize should exhibit large responses to the Emanuel Policy. Panel (a) limits the sample to "low benefit" debtors who should derive little benefit from a bankruptcy filing, absent the Emanuel Policy. These consumers have no homes, no secured debt, no non-exempt property, and annual income below 150% of the poverty line. Panel (b) also limits the sample to "low benefit" debtors, but compares those who list the word "driver" in their occupations to those who do not list this word. The vertical lines identify the year 2011, when the Emanuel Policy commenced.

FIGURE D.4: Age and Price of Tickets



(a) Average Age of Ticket at Resolution (payment or a bankruptcy filing)

(b) Distribution of Average Ticket Price by Year of Issuance

Note: These plots use ticket-level data obtained by ProPublica via a FOIA request submitted to the City of Chicago. The vertical lines identify the year 2011, when the Emanuel Policy commenced.

E Appendix Tables

Table E.1: Change in Composition of Chapter 13 Filers: Comparing Three Years Before and After the Emanuel Policy Went On-Line

	2008 - 2010 Mean	2012 - 2014 Mean	t-test p value
Panel A: All Cases			
% African American	.35	.40	0.00
% Joint Filing	.25	.16	0.00
% Below 200% of Poverty Line	.27	.40	0.00
% Homeowner	.61	.43	0.00
% Car Owner	.83	.83	0.75
% Car Owner but Not Homeowner	.33	.50	0.00
% Not Car Owner, Not Homeowner	.10	.13	0.00
% COC Debt	.34	.55	0.00
Observations	37,437	51,396	88,833
Panel B: Homeowners			
% African American	.30	.28	0.00
% Joint Filing	.35	.29	0.00
% Below 200% of Poverty Line	.09	.13	0.00
% Car Owner	.87	.88	0.00
% City Debt	.23	.28	0.00
Total City Debt ($)	335	789	0.00
Total Assets ($)	267,231	206,695	0.00
Secured Debt ($)	256,837	217,543	0.01
Total Debt ($)	306,905	265,281	0.01
Observations	22,756	20,945	43,701
Panel C: Car Owner but Not Homeowner			
% African American	.50	.55	0.00
% Joint Filing	.08	.06	0.00
% Below 200% of Poverty Line	.51	.59	0.00
% COC Debt	.50	.73	0.00
Total City Debt ($)	1,528	3,030	0.00
Total Assets ($)	18,647	17,282	0.24
Secured Debt ($)	13,722	11,287	0.00
Total Debt ($)	48,578	48,380	0.74
Observations ($)	8,489	18,654	27,143
Panel D: Not Car Owner, Not Homeowner			
% African American	.49	.55	0.00
% Joint Filing	.02	.02	0.06
% Below 200% of Poverty Line	.68	.74	0.00
% COC Debt	.55	.78	0.00
Total City Debt ($)	2,373	4,273	0.00
Total Assets ($)	7,061	5,588	0.00
Secured Debt ($)	2,648	1,901	0.28
Total Debt ($)	36,436	38,588	0.06
Observations ($)	2,499	4,728	7,227

Note: This table compares the mean characteristics of Chapter 13 debtors before and after initiation of the Emanuel Policy in 2011. Panel A presents statistics for the full sample; the other panels analyze subsamples with different asset ownership profiles. We use two-sided t-tests to test the difference between pre- and post-Emanuel characteristics.

Table E.2: Effect of Propensity-Score Matching on Covariate Balance: Individual-Level Data

Panel A: Without Matching				
	African Americans		Others	
	mean	sd	mean	sd
Assets ($)	70,031.06	466.27	124,686.10	596.84
Debt ($)	115,889.50	570.21	206,061.30	2,076.39
Secured Debt	73,092.83	491.28	133,321.20	722.17
% with Secured Debt	73.20	0.17	72.43	0.14
% with Debt to City of Chicago	44.34	0.20	17.38	0.12
% with Real Estate	37.59	0.19	48.47	0.16
% Car Owner	77.52	0.16	78.48	0.13
Average Monthly Income	2,812.95	6.65	3,125.76	7.94
Average Monthly Expenses	2,553.38	5.82	3,446.65	309.25
% Income Below $15,000	10.12	0.12	11.73	0.10
Observations	64,593		101,207	

Panel B: Matched on Case Controls				
	African Americans		Others	
	mean	sd	mean	sd
Assets ($)	70,039.31	466.34	87,985.54	624.47
Debt ($)	115,903.90	570.29	147,469.30	2,014.67
Secured Debt	73,098.85	491.36	92,922.79	744.38
% with Secured Debt	73.20	0.17	70.31	0.18
% with Debt to City of Chicago	44.34	0.20	22.62	0.17
% with Real Estate	37.60	0.19	35.55	0.19
% Car Owner	77.52	0.16	77.83	0.17
Average Monthly Income	2,812.19	6.62	2,993.96	10.22
Average Monthly Expenses	2,553.33	5.82	2,827.38	6.74
% Income Below $15,000	10.13	0.12	10.84	0.12
Observations	64,581		62,881	

Panel C: Matched on Case Controls and Tracts				
	African Americans		Others	
	mean	sd	mean	sd
Assets ($)	80,384.08	676.89	94,373.09	795.74
Debt ($)	130,208.60	813.04	156,485.50	3,427.68
Secured Debt	85,367.03	698.03	99,911.04	956.24
% with Secured Debt	75.41	0.23	75.09	0.23
% with Debt to City of Chicago	39.04	0.26	30.31	0.24
% with Real Estate	43.08	0.26	45.98	0.26
% Car Owner	79.00	0.21	79.48	0.21
Average Monthly Income	2,964.21	9.28	3,076.46	10.41
Average Monthly Expenses	2,700.89	8.22	2,877.27	8.92
% Income Below $15,000	9.38	0.15	10.08	0.16
Observations	36,393		35,927	

Note: This table compares the mean characteristics of African American and Other debtors before and after applying the matching procedure described in Appendix A. Panel A presents debtor characteristics before matching; Panel B analyzes the data after matching on debtor characteristics; Panel C analyzes the data after matching on both debtor characteristics and census tract.

Table E.3: Effect of Propensity-Score Matching on Covariate Balance: Zip Code-Level Data

	Chicago		Control Group		Full Sample	
	mean	sd	mean	sd	mean	sd
% African American	27.55	4.20	26.78	3.96	8.02	0.10
% Hispanic	21.54	2.73	22.76	3.26	9.09	0.10
Log Median Income	10.86	0.06	10.86	0.07	10.82	0.00
% Food Desert	20.74	3.35	19.76	3.41	20.17	0.19
% Commute More Than 45 Minutes	27.48	1.10	27.46	1.56	16.89	0.07
% Income Below $15,000	15.86	1.04	15.47	1.57	12.97	0.05
# Ch. 13 Cases per 1,000 Residents in 2010	2.01	0.23	1.33	0.25	1.22	0.03
% Ch. 13 in 2010	27.47	1.69	25.51	2.93	26.21	0.15
Observations	66		66		27,853	

Note: This table compares the characteristics of Chicago and non-Chicago zip codes, before and after applying the matching procedure described in Appendix A. The first column shows summary statistics for Chicago zip codes; the second shows them for matched zip codes; the third shows them for all non-Chicago zip codes.

Table E.4: Commuting Distance, Race, and Bankruptcy Filing Rates by Zip Code in the Northern District of Georgia (including Atlanta)

Distance Quintile	Distance Measure: % Travel $>$ 45 min. or Food Desert	% Travel $>$ 45 min.	% Food Desert	% African American	% Chapter 13	Chapter 13 Filings per Thousand	Median Income
1	12.94	12.81	0.16	4.58	35.25	1.70	38.69
	(3.96)	(3.86)	(0.59)	(9.05)	(21.78)	(1.56)	(5.67)
2	22.87	20.22	2.92	7.73	39.76	1.97	40.29
	(3.95)	(6.17)	(7.00)	(12.01)	(14.40)	(1.13)	(5.12)
3	45.90	20.60	30.68	17.83	41.48	2.65	41.29
	(7.16)	(8.13)	(11.89)	(22.16)	(15.53)	(2.01)	(4.77)
4	69.61	21.86	60.42	49.72	46.37	3.90	40.63
	(7.64)	(6.75)	(9.49)	(33.31)	(11.12)	(2.60)	(6.32)
5	91.82	20.92	89.49	50.80	48.06	3.33	36.18
	(6.47)	(6.84)	(8.48)	(27.03)	(9.07)	(1.91)	(7.53)
Obs.	145	145	145	145	145	145	145

Note: This table stratifies Northern District of Georgia zip codes (n=145) into quintiles of "Distance," measured as the percent of zip code residents who travel at least 45 minutes to work or live at least one mile from a supermarket ("food desert"). Within each quintile, we present mean zip code characteristics and associated standard deviations (in parentheses).

Table E.5: Commuting Distance, Race, and Bankruptcy Filing Rates by Zip Code in the Western District of Tennessee (including Memphis)

Distance Quintile	Distance Measure: % Travel $>$ 45 min. or Food Desert	% Travel $>$ 45 min.	% Food Desert	% African American	% Chapter 13	Chapter 13 Filings per Thousand	Median Income
1	11.41	10.58	0.96	11.37	64.74	4.46	33.33
	(2.55)	(3.06)	(2.61)	(14.64)	(14.71)	(2.16)	(3.36)
2	18.03	17.04	1.18	9.63	57.13	3.69	31.53
	(3.17)	(2.80)	(4.41)	(13.21)	(13.52)	(1.21)	(3.68)
3	41.88	21.81	25.46	15.69	62.40	4.23	32.84
	(11.57)	(10.34)	(19.90)	(16.24)	(14.34)	(2.55)	(3.20)
4	78.14	12.01	74.97	37.78	70.11	8.01	31.13
	(6.59)	(7.94)	(7.53)	(29.22)	(14.36)	(4.67)	(4.59)
5	97.40	14.07	96.71	66.31	79.36	12.94	28.19
	(3.90)	(11.16)	(5.17)	(34.32)	(8.37)	(6.41)	(6.02)
Obs.	73	73	73	73	73	73	73

Note: This table stratifies Western District of Tennessee zip codes (n=73) into quintiles of "Distance," measured as the percent of zip code residents who travel at least 45 minutes to work or live at least one mile from a supermarket ("food desert"). Within each quintile, we present mean zip code characteristics and associated standard deviations (in parentheses).

Table E.6: Baseline Regression (Zip Code-Level Data)

% Chapter 13	(1)	(2)	(3)	(4)	(5)
African American Zip	0.21**	0.17**	0.18**		
	(0.000)	(0.000)	(0.000)		
Cook County		0.0011	-0.031**		
		(0.925)	(0.004)		
× African American Zip		0.088**	0.060**		
		(0.000)	(0.010)		
Post-Emanuel			-0.036**	-0.040**	-0.016
			(0.000)	(0.000)	(0.078)
× African American Zip			-0.026*	-0.018	-0.018
			(0.028)	(0.119)	(0.111)
× Cook County			0.052**	0.057**	0.057**
			(0.000)	(0.000)	(0.000)
× African American Zip × Cook County			0.044**	0.035*	0.036*
			(0.005)	(0.021)	(0.019)
Time Trend	Yes	Yes	Yes	Yes	Yes
Zip Code Fixed Effect	No	No	No	Yes	Yes
Year Fixed Effect	No	No	No	No	Yes
Observations	19,348	19,348	19,348	19,348	19,348

Note: This table estimates Equation (2) using zip code-level data, with each Cook County zip code matched to three nearest neighbors, located anywhere in the United States. The dependent variable is Chapter 13's share of bankruptcy filings. The coefficient of interest (the DDD estimate) is the final row of the table (*Post-Emanuel* × *African American zip* × *Cook County*). Parentheses present p-values; the symbols have the following meanings: * $p < 0.05$ and ** $p < 0.01$.